AFTER THE BATTLE

REMAKING MEMPHIS BELLE

OPERATION 'SEALION'

Number 69

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Front Cover: In 1943 William Wyler made the film documentary *Memphis Belle*. Now in 1990 the sequel by his daughter, Catherine, is on course to become another film classic. The crew are pictured with their four-legged friend Scampi during filming at Binbrook in 1989. (Warner Bros)

Centre Pages: In July 1940 the barge *Franz Christian* was commandeered and converted into a landing craft for the invasion of Britain. Now she is preserved as a historic part of Operation 'Sealion' at the ship lift on the Wesel-Datteln Canal at Henrichenburg. (Dr Peter Schenk)

Rear Cover: The unveiling of the memorial to 'The Few' of the Normandy campaign — the 150 Typhoon pilots killed in May-August 1944. (Denis Sweeting)

Acknowledgements: Roger Freeman, Technical Adviser for the re-making of *Memphis Belle*, wishes to acknowledge with grateful thanks, the help of Larry Carne, Richard Conway, Stuart Craig, Norman Dorme, David Lee, John Littleton, Steve Norris, George Pennick and Alan Tomkins in the preparation of this feature.

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The events which have happened in France in the last fortnight have not come to me with any sense of surprise. Indeed, I indicated a fortnight ago as clearly as I could to the House that the worst possibilities were open, and I made it perfectly clear then that whatever happened in France would make no difference to the resolve of Britain and the British Empire to fight on — if necessary for years, if necessary alone. . . .

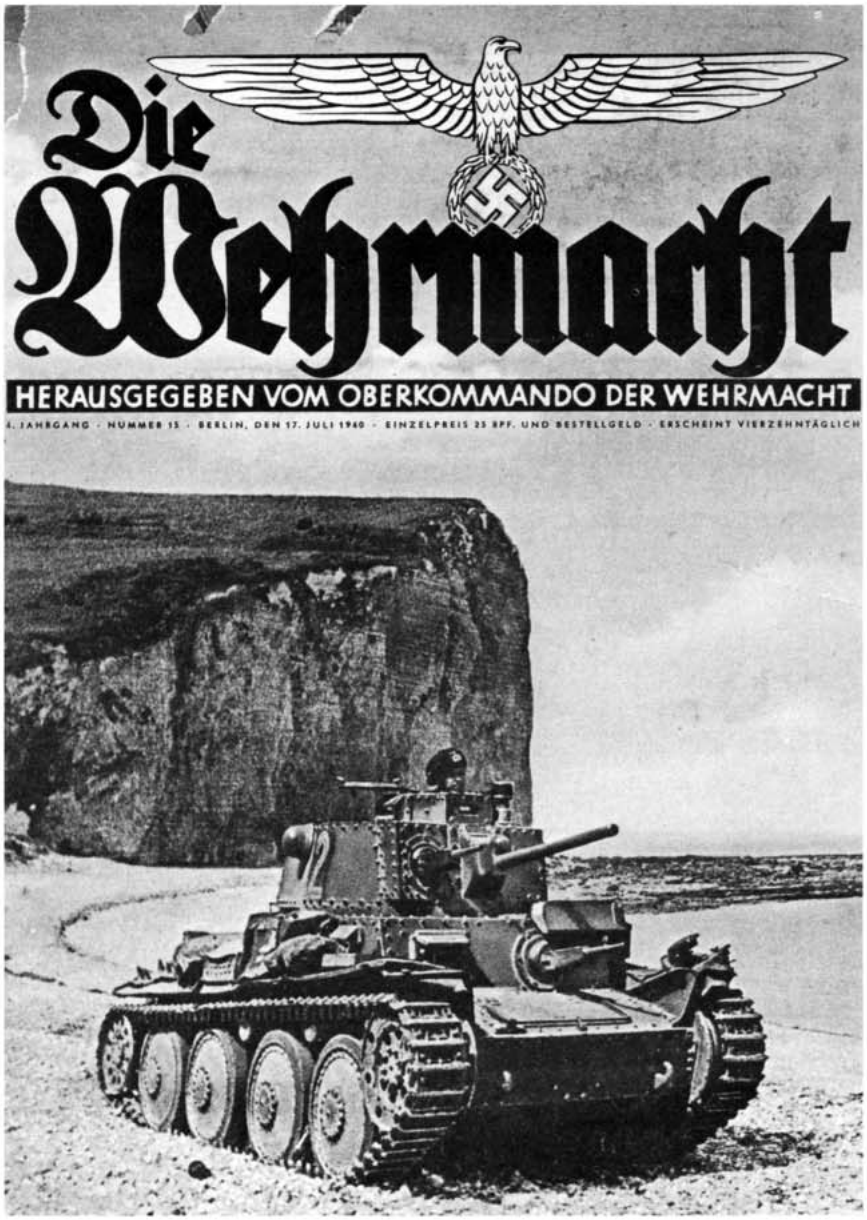
What General Weygand called the 'Battle of France' is over. I expect that the 'Battle of Britain' is about to begin. Upon this battle depends the survival of the Christian civilisation. Upon it depends our own British life and the long-continued history of our institutions and our Empire.

The whole fury and might of the enemy must very soon be turned on us. Hitler knows that he will have to break us on this island or lose the war. If we can stand up to him all Europe may be free and the life of the world may move forward into broad and sunlit uplands. If we fail, then the whole world, including the United States, and all that we have known and cared for, will sink into the abyss of a new dark age made more sinister and perhaps more prolonged by the light of a perverted science.

Let us, therefore, do our duty and so bear ourselves that if the British Commonwealth and Empire lasts a thousand years men will still say, 'This was their finest hour.'

WINSTON CHURCHILL, JUNE 18, 1940*

* The text is that released to the Press at the time. Certain words and phrases were amended in later versions.



'SEALION' – THE INVASION THAT NEVER WAS

By Dr Peter Schenk

When German forces reached the Channel coast at the end of May 1940 during the campaign in the west, not much thought had been given to invading the last remaining enemy, Britain. Although Grossadmiral Erich Raeder, Commander-in-Chief of the German Navy, had commissioned a study in November 1939 about the feasibility of mounting an invasion across the Channel, no material or even theoretical preparations resulted from it. With the means at his disposal for inflicting a decisive defeat on the British Expeditionary Force trapped on the Continent, Hitler even stopped the panzer divisions short of the coup de grâce, enabling the BEF to be evacuated from Dunkirk. The reason for this far-reaching decision has never been satisfactorily explained, but one consideration must be that Hitler did not at this time seek the outright submission of Britain but rather sought to partition the spheres of interest of both countries. His real target was the Soviet Union and this attitude strongly influenced the preparations for an invasion of Great Britain. He also genuinely believed that in the end Britain would come to terms.

Raeder mentioned the possibility of an invasion in Führer conferences on May 21 and June 20, but without achieving a positive response. It was not until June 30 that General der Artillerie Alfred Jodl, Chief of the Wehrmacht Operations Staff, argued that preparing an invasion would increase pressure on Britain, and could well bring about a peace settlement on its own without the necessity of actually putting the invasion into effect. On July 16 Hitler set out these thoughts in his Directive No. 16.

Erwin Rommel, commander of 7. Panzer-Division, June 10: ' . . . There were now two columns driving up the road, sometimes side by side, the tanks on the left and the reconnaissance battalion on the right. The division now went all out for the sea at an average speed of 25-40 mph. I had already issued orders through HQ for all units to increase their speed to the maximum. . . . With my signals section I drove on in advance of the regiment through Les Petites Dalles [10 miles east of Fécamp, and 6 miles west of Veulettes] and down to the water. The sight of the sea with the cliffs on either side thrilled and stirred every man of us; also the thought that we had reached the coast of France. We climbed out of our vehicles and walked down the shingle beach to the water's edge until the water lapped over our boots. Several dispatch riders in long waterproof coats walked straight out until the water was over their knees, and I had to call them back. Close behind us [Oberst Karl] Rothenburg came up in his command tank, crashed through the beach wall, and drove down to the water.'

The Führer and Supreme
Commander of the Armed Forces

Führer Headquarters
16th July 1940
7 copies

Directive No. 16
On preparations for a landing operation against England

Since England, in spite of her hopeless military situation, shows no signs of being ready to come to an understanding, I have decided to prepare a landing operation against England, and, if necessary, to carry it out.

The aim of this operation will be to eliminate the English homeland as a base for the prosecution of the war against Germany and, if necessary, to occupy it completely.

I therefore order as follows:

1. The *landing* will be in the form of a surprise crossing on a wide front from about Ramsgate to the area west of the Isle of Wight. Units of the Air Force will act as artillery, and units of the Navy as engineers.

The possible advantages of *limited operations* before the general crossing (e.g. the occupation of the Isle of Wight or of the County of Cornwall) are to be considered from the point of view of each branch of the Armed Forces and the results reported to me. I reserve the decision to myself.

Preparations for the entire operation must be completed by the middle of *August*.

2. These preparations must also create such conditions as will make a landing in England possible, viz:

(a) The English Air Force must be so reduced morally and physically that it is unable to deliver any significant attack against the German crossing.

(b) Mine-free channels must be cleared.

(c) The Straits of Dover must be closely sealed off with minefields on both *flanks*; also the Western entrance to the Channel approximately on the line Alderney–Portland.

(d) Strong forces of coastal artillery must command and protect the forward coastal area.

(e) It is desirable that the English Navy be tied down shortly before the crossing, both in the North Sea and in the Mediterranean (by the Italians). For this purpose we must attempt even now to damage English home-based naval forces by air and torpedo attack as far as possible.

France signed her Armistice with Germany on June 21, yet Hitler appeared to be in no hurry to pursue the battle against Britain and he took time off to visit the battlefields where he had fought 25 years before. From his base at Führerhauptquartier Wolfsschlucht at Brûly-de-Pesche *(see After the Battle No. 19)*, on June 25 and 26, he toured the old Western Front accompanied by two of his former comrades, Max Amann and Ernst Schmidt. Here, in the Einbettungsfriedhof-Nord at Langemark, where two of the old pillboxes of the WWI Langemark Line had been preserved, he pays homage before the row of regimental memorial tablets. (Bundesarchiv)

Brûly-de-Pesche in southern Belgium had been hurriedly selected on May 22 to satisfy Hitler's desire to have a forward headquarters nearer the fighting, but on June 28 he had left for FHQu Tannenberg which had been prepared in the Black Forest. However the facilities there were basic — more like a holiday chalet — and after a week Hitler returned to Berlin from where his invasion directive was issued on July 16. Meanwhile, an advance detachment of the Führer-Begleit-Bataillon — the unit responsible for security at all Hitler's headquarters — had moved to Ziegenberg near Bad Nauheim, north-west of Frankfurt, where building works had been under way since October 1939 on a purpose-built HQ for the Western Front. Known as Adlerhorst (Eagle Eyrie), it was scheduled to be the Führer's HQ for Unternehmen 'Seelöwe' — Operation 'Sealion'. In the event of course it was never used, but it came into its own in 1944 when Hitler occupied it for his offensive in the west code-named 'Wacht am Rhein'. It was blown up by US forces in 1945 *(right)*.

The day after Hitler sent out his secret directive, his opposite number in Britain was touring battlefields of a different kind: those in Southern Command . . . yet to see action but where invasion was expected. In his recent speeches Churchill had made it increasingly clear that Britain was prepared to continue the fight alone for as long as it was necessary. This resolve had been demonstrated to the world in the clearest possible way on July 3 when the Royal Navy shelled ships of its recent ally in North Africa to prevent them coming under German control, killing over 1,250 French sailors. *Above:* **In this picture taken at Sandbanks, Poole, on July 17, Churchill, grim-faced, passes a sandbagged blockhouse, part of the South Coast fortifications.**

3. *Command organisation and preparations*

Under my overriding command and according to my general instructions, the Commanders-in-Chief will command the branches of the Armed Forces for which they are responsible.

From 1st August the operations staffs of Commander-in-Chief Army, Commander-in-Chief Navy, and Commander-in-Chief Air Force are to be located at a distance of not more than 50 kilometres from my headquarters (Ziegenberg).

It seems to me useful that the inner operations staffs of Commander-in-Chief Army and Commander-in-Chief Navy should be placed together at Giessen.

Commander-in-Chief Army will detail one Army Group to carry out the invasion.

The invasion will bear the cover name '*Seelöwe*' [Sealion].

In the preparation and execution of this operation the following tasks are allotted to each Service:

(a) Army:

The Army will draw up the operational and crossing plans for all formations of the first wave of the invasion. The anti-aircraft artillery which is to cross with the first wave will remain subordinate to the Army (to individual crossing units) until it is possible to allocate its responsibilities between the support and protection of troops on the ground, the protection of disembarkation points, and the protection of the airfields which are to be occupied.

The Army will, moreover, lay down the methods by which the invasion is to be carried out and the individual forces to be employed, and will determine points of embarkation and disembarkation in conjunction with the Navy.

(b) Navy:

The Navy will procure the means for invasion and will take them, in accordance with the wishes of the Army, but with due regard to navigational considerations, to the various embarkation points. Use will be made, as far as possible, of the shipping of defeated enemy countries.

The Navy will furnish each embarkation point with the staff necessary to give nautical advice, with escort vessels and guards. In conjunction with air forces assigned for protection, it will defend the crossing of the Channel on both flanks. Further orders will lay down the chain of command during the crossing. It is also the task of the Navy to co-ordinate the setting up of coastal artillery — i.e. all artillery, both naval and military, intended to engage targets at sea — and generally to direct its fire. The largest possible number of *extra-heavy guns* will be brought into position as soon as possible in order to cover the crossing and to shield the flanks against enemy action at sea. For this purpose railway

Had invasion come in the summer of 1940, the Prime Minister, together with the Chiefs-of-Staff and the War Cabinet, would have occupied the bunker beneath the New Public Offices on the left in this picture taken on Horse Guards Approach Road. This pillbox was built in the spring of 1940 as a first line of defence for the Central War Room. (IWM)

guns will also be used (reinforced by all available captured weapons) and will be sited on railway turntables. Those batteries intended only to deal with targets on the English mainland (K5 and K12) will not be included. Apart from this the existing extra-heavy platform-gun batteries are to be enclosed in concrete opposite the Straits of Dover in such a manner that they can withstand the heaviest air attacks and will permanently, in all conditions, command the Straits of Dover within the limits of their range. The technical work will be the responsibility of the Organisation Todt.

(c) *The task of the Air Force will be:*
To prevent interference by the enemy Air Force.

To destroy coastal fortresses which might operate against our disembarkation points, to break the first resistance of enemy land forces, and to disperse reserves on their way to the front. In carrying out this task the closest liaison is necessary between individual Air Force units and the Army invasion forces.

Also, to destroy important transport highways by which enemy reserves might be brought up, and to attack approaching enemy naval forces as far as possible from our disembarkation points. I request that suggestions be made to me regarding the employment of parachute and airborne troops. In this connexion it should be considered, in conjunction with the Army, whether it would be useful at the beginning to hold parachute and airborne troops in readiness as a *reserve*, to be thrown in quickly in case of need.

4. Preparations to ensure the necessary communications between France and the English mainland will be handled by the Chief, Armed Forces Signals.

The use of the remaining eighty kilometres of the East Prussia cable is to be examined in co-operation with the Navy.

5. I request Commanders-in-Chief to submit to me as soon as possible –

(a) The plans of the Navy and Air Force to establish the necessary conditions for crossing the Channel (see paragraph 2).

(b) Details of the building of coastal batteries (Navy).

(c) A general survey of the shipping required and the methods by which it is proposed to prepare and procure it. Should civil authorities be involved? (Navy).

(d) The organisation of Air Defence in the assembly areas for invasion troops and ships (Air Force).

(e) The crossing and operation plan of the Army, the composition and equipment of the first wave of invasion.

(f) The organisation and plans of the Navy and Air Force for the execution of the actual crossing, for its protection, and for the support of the landing.

(g) Proposals for the use of parachute and

On May 10 the Home Defence Executive had been formed to deal with the threat of invasion. Under the Commander-in-Chief Home Forces, General Sir Edmund Ironside, within a month a basic defensive plan had been drawn up based on a series of 'stop lines' utilising natural features such as rivers. London and the industrial centre of the country were to be protected by a main 'GHQ Line' *(see After the Battle No. 14)*. Ironside's plans were submitted to the Chiefs-of-Staff on June 25 and approved but, following Churchill's inspection tour of the defences in July, the General was immediately relieved of his command. He was replaced by Lieutenant-General Alan Brooke who had recently experienced German tactics first hand in France as commander of II Corps. While the building of fixed defences still continued at top speed, Brooke realised their limited value and organised mobile reserves near the coast able to move against any enemy landing as soon as it occurred.

airborne troops and also for the organisation and command of anti-aircraft artillery as soon as sufficient English territory has been captured.

(h) Proposal for the location of Naval and Air Headquarters.

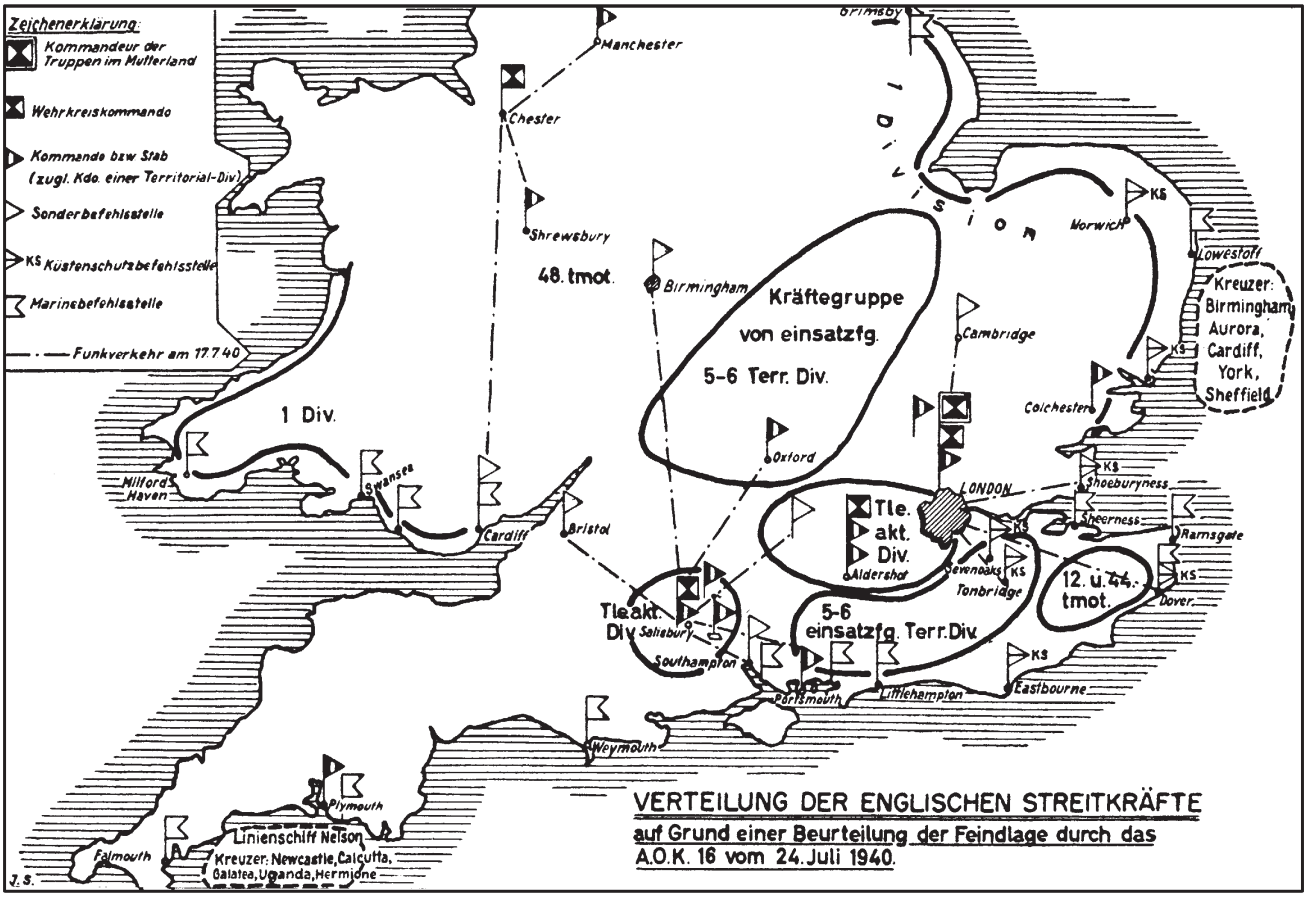
(i) Views of the Navy and Air Force whether limited operations are regarded as useful *before* a general landing and, if so, of what kind.

(k) Proposal from Army and Navy regarding command *during* the crossing.

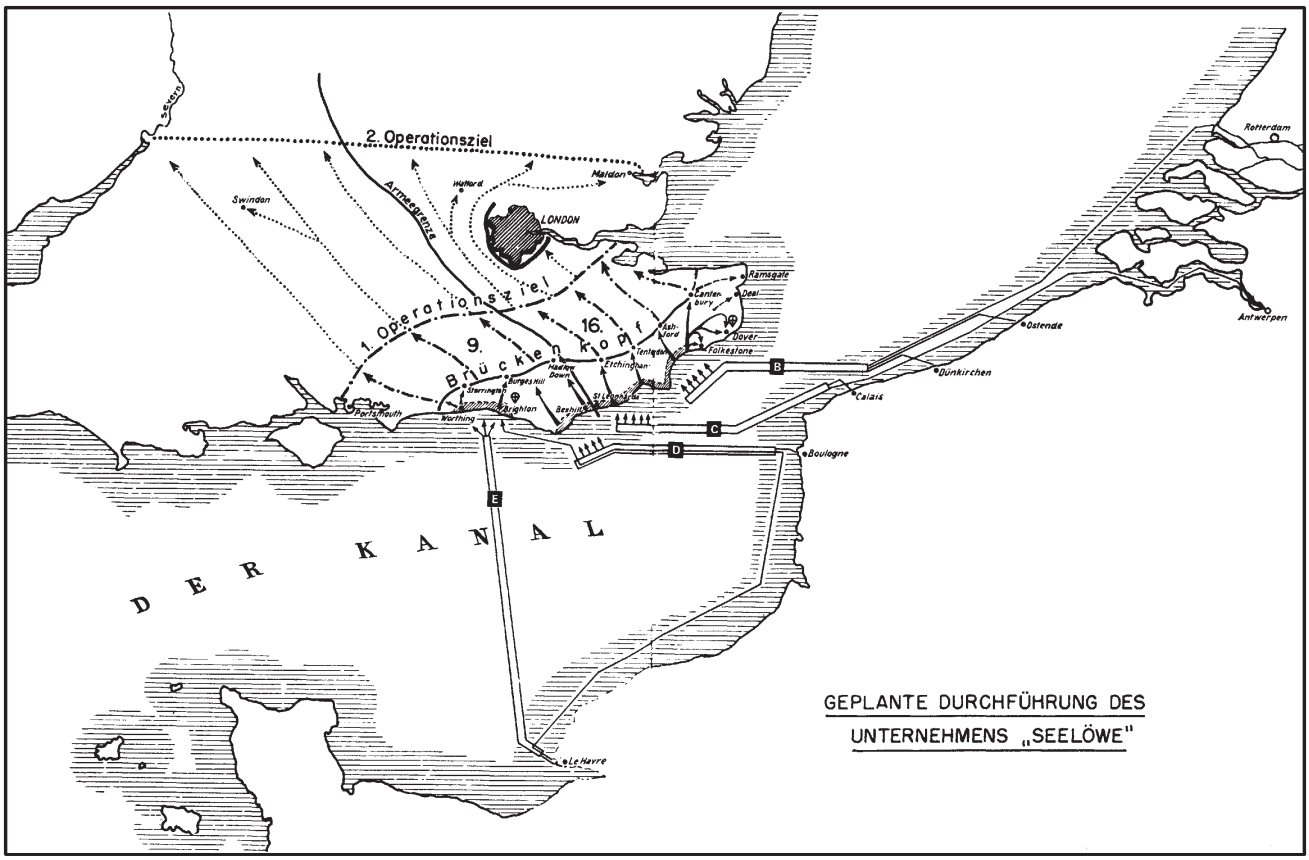
ADOLF HITLER

Remains of the GHQ Line near Chelmsford where a line of strongpoints and pillboxes still defends the A130.

The believed disposition of British forces as given in *Dokumente zum Unternehmen Seelöwe* by Karl Klee from an appendix to an AOK 15 (Armee Oberkommando) report dated July 24, 1940.



The London defence line included an anti-tank ditch and concrete tank traps. *Left:* **Parts of the ditch remain where it runs through Epping Forest near Theydon Bois.** *Right:* **Tank traps alongside the railway line at Fairlop.**



Like any major operation, the plans for the invasion were amended and revised many times, all the more so with Sealion because of the conflicting interests of the three Services. This is the final version drawn up in September. (*Dokumente zum Unternehmen Seelöwe*, Karl Klee)

Preparations were now begun, but they developed along largely unco-ordinated lines as Hitler, as well as the three Services, had different attitudes towards the project. Hitler and Jodl regarded the operation as merely a threat against Britain, whereas the Chief of the General Staff of the Army, Generaloberst Franz Halder, and the Chief of the Operations Branch of the High Command of the Armed Forces, Generalmajor Walter Warlimont, were strong backers of an actual landing to keep the initiative in the war. On the other hand the Navy was in opposition as it felt too weak to carry out and protect the crossing, whereas the Air Force under Generalfeldmarschall Göring believed it could end the war on its own by mounting an all-out air offensive.

With each Service working separately without a joint staff, the Army and Navy planners soon developed conflicting ideas. From the Army point of view, a broad front was preferable to split enemy forces, but the Navy wanted a narrow front to facilitate protection of the crossing. Ignoring the Navy's limitations, the Army first envisaged an assault with thirteen divisions landing in the first wave at Weymouth, between Portsmouth and Brighton, and between Margate and Hastings. However, the Navy rejected this proposal at the end of July, stating that only a crossing near the Straits of Dover could be considered safe. After long discussions, Warlimont reached agreement for a main landing between Folkestone and Eastbourne and a secondary landing of only shock troops in Brighton Bay from motor fishing vessels. Reinforcements were to be put ashore there only if the situation was favourable, otherwise they were to be landed in the Eastbourne sector.

Even greater problems were faced trying to build up a transport fleet. Apart from the successful landings carried out on the Russian-held islands of Oesel, Moon and Dagoe in the Baltic in the Great War, the German Navy and Army had little experience of amphibious operations, though engineers held annual landing exercises on the Baltic coast, and had also conceived ways of converting river barges into auxiliary landing vessels. Even a motor landing craft, the Pionierlandungsboot, was developed along the same lines as the later Allied LCM, but only two were available in the autumn of 1940.

When the order was given on July 2 to prepare for an invasion, the Navy was at a loss to know where to start. With no landing craft on hand, a whole fleet had to be rebuilt using existing merchant vessels. With engineering help, a method was quickly devised to convert river barges to enable them to

The order to prepare for the invasion of Britain was given on July 2. Five days later the commandeering of shipping began. In the summer of 1940, Willi Marx was a 17-year-old lad who had spent much of his life living on board his parents' boat, the motor barge *Rhemosa* (left), her name indicating the waters she mostly sailed: the Rhein, Mosel and Saar rivers. Built in 1936 as a smaller péniche-type barge able to negotiate the narrow Belgian and French canal locks, she could load 341 tons prior to the conversion. On July 7, 1940, she lay in Duisburg-Ruhrort, awaiting a cargo of coal for Minden but, as yet, still empty, a twist of fate which led her to become the first barge to be commandeered for Operation 'Sealion'. At 11.30 a.m. that Sunday a civilian commission came on board and ordered her to sail at once to Walsum shipyard for conversion.

unload tanks on an open beach. The bottom of each barge was reinforced with concrete and I-beams and trackway was built into the cut-out bow above the waterline which was sealed with wooden planks for the crossing. As half the barges were unpowered, and those that had engines were still unable to keep up with the speed of the fleet, all had to be towed by tugs two at a time. The unpowered barges also had to be pushed ashore by two 'pusher' boats alongside, mostly comprising small yachts or fishing vessels, tugs having too great a draught for this task.

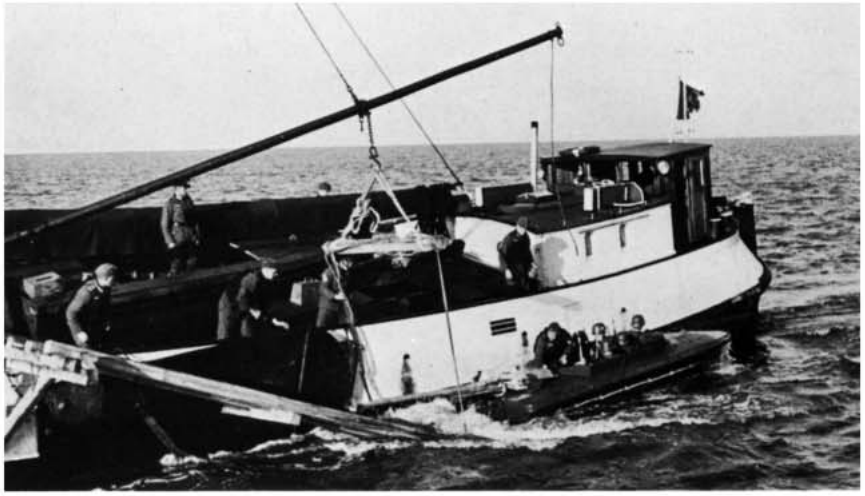
Nevertheless, the barges proved quite seaworthy and the powered ones subsequently performed well during the landings on the Soviet-held islands in the Baltic in 1941. Apart from not having a double skin, their greatest disadvantage was the length of time for the building of the outer ramp, which could only be let down when the barge had grounded on the beach. This meant that the vessels could land only on a falling tide, and then wait until the barge had settled before unloading could begin. They had to remain high and dry on the beach until the next high tide. This was one of the reasons for the long turn-round times the Navy offered the Army.

The first assault troops were to be landed from converted engineer assault boats, each carrying six men, and launched down slides from minesweepers and tugs. Rubber dinghies were also provided. Some barges were armoured with concrete walls, and PzKpfw III and IV panzers were fitted with a snorkel tube which enabled them to be be landed into a depth of four metres from specially adapted barges to reinforce the first wave, along with PzKpfw II amphibian tanks fitted with floats.

The invasion fleet was to be made up of tow formations of around a hundred barges, and of convoys of transports (converted freighters) towing two barges each arriving after the first troops had landed. Some barges from the tow formations had to unload the transports which were to return in a shuttle service.

The German Navy was in no real position to wage amphibious warfare and had no ready-made vessels suitable for landing over open beaches. However there were any number of barges available, not only from Germany but also in the newly-conquered countries, all of which relied heavily on the transportation of goods by river and canal. With the bows cut down and the provision of a ramp, the flat-bottomed barges were an easy, quick answer to the problem. At Walsum, further down the Rhine, the *Rhemosa* was pulled onto a slipway, the conversion work taking less than four days before she was moved in a day and night cruise to Emden at the mouth of the River Ems, during which she had absolute priority at all locks. Willi's father, Wilhelm Marx senior, was at the helm, assisted by a naval officer and special pilot from Göring's private yacht *Carin II*, although both were inexperienced in river navigation. *Above:* **The first trials took place on a canal at Petkum on July 23.**

The Marx family were still on board — Willi is fifth from the left — but at the end of July his mother and father had to leave. He followed a few days later. Having no home of their own on land, they were given a flat in Duisburg. More trials followed on the uninhabited islands of Memmertsand and Lütje Hörn, and in September *Rhemosa* arrived in Rotterdam and was given the identification number *R34 Pmot*. There she remained, more or less idle until 1942 when the Minister for Armaments, Albert Speer, decided to use 190 of these motorised barges, among them *Rhemosa*, now re-designated *MW100*, for fortification and road works in Norway. After the end of the war she was sold by Norway to a private owner. Unfortunately it has not been possible to trace her subsequent fate.



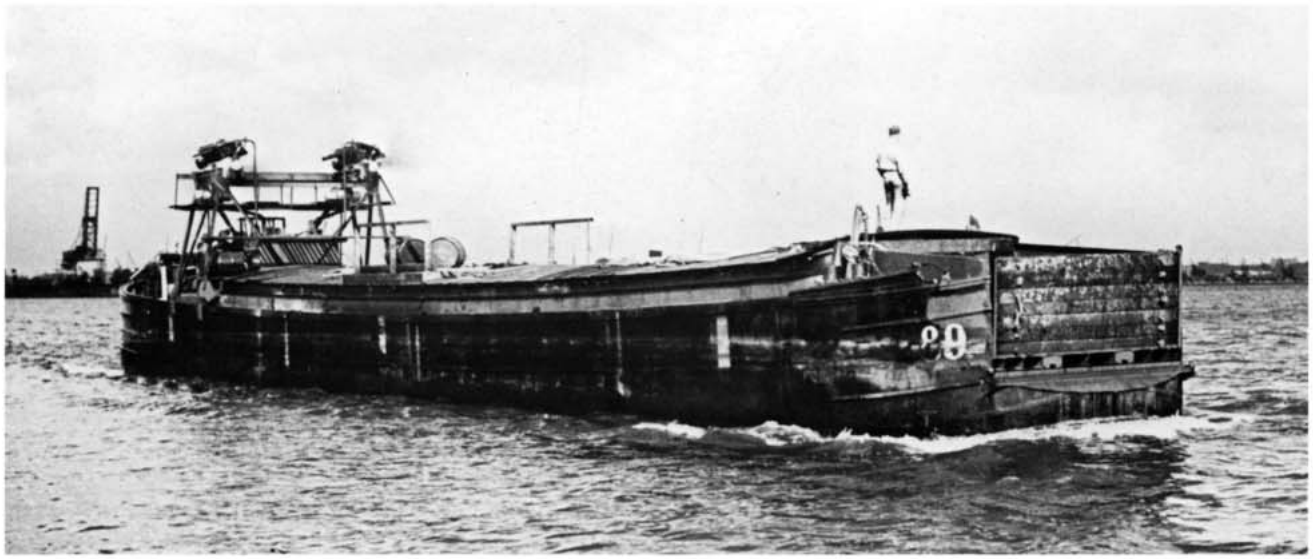
The first to land would be six-man teams in converted engineer assault boats. These were to be were carried to the release position aboard tugs, coasters and minesweepers and launched using cradles *left* or ramps *right*. (ECP Armées/Bundesarchiv)

The conversion of all the vessels required in the time allowed — about two months — was an enormous task, the largest being the conversion of the barges, of which 2,318 had been delivered by the end of September. The work took place in Mannheim, Mainz and Duisburg in Germany as well as in Amsterdam, Rotterdam and Antwerp in the Netherlands and Belgium, and at eight places along the River Seine between Paris and Le Havre. Construction troops, some of whom were later used to man the vessels, helped to speed the programme. Fitting out 174 freighters as transports was a little easier, and the assembly of 426 tugs, some 1,600 motor fishing vessels and yachts and 100 coasters was problematic only in terms of logistics and the provision of personnel.

The protection of the actual crossing was the weak link in the operation and one of the main reasons why in the end 'Sealion' was cancelled. To keep the British fleet at bay, heavy batteries of naval and Army guns were placed along the Dover Straits. (They are all covered in *After the Battle No. 29* except for Batterie Prinz Heinrich with two 280mm guns which was replaced later by the stronger Batterie Lindemann in 1942.)

Many minefields were projected and, in order to lay them quickly, several additional auxiliary minelayers were commissioned. A special tidal mine for the Dover Straits was developed and produced. Of the weak German surface forces, 7 destroyers and 19 torpedo boats were to operate in the western Channel, and some 42 motor torpedo boats (E-boats) in the Dover Straits. All existing submarines, some 39 including training vessels, were to be deployed in the Channel, off the Firth of Forth, and at Scapa Flow.

Submersible tanks — U-Panzers — would reinforce the first wave. Here a PzKpfw III exits from the barge *D81 PU mot* — the former *Hans Herbert* —during exercises at Sylt. For the actual invasion she was to operate out of Dunkirk. (Jung)



Because of their poor top speed, it was intended that all the barges would be towed across the Channel. However, attempts were made to motorise unpowered barges by adding aircraft engines. (ECP Armées)

Much attention was given to a deception landing operation against the British East Coast called 'Herbstreise' (Autumn Journey). This was to take place a few days before the actual operation and involved the fast passenger liners *Bremen* and *Europa*, several freighters and the three light cruisers, *Emden*, *Nürnberg* and *Köln*. The heavy cruiser *Hipper* was also to break through into the Atlantic to try to draw British forces away from the area. However, there were not enough destroyers to prevent the minefields from being swept or to engage British light forces, especially at night and in bad weather when the Luftwaffe would not be able to operate.

On September 5, Generalleutnant Georg von Sodenstern, the Chief of the General Staff of Heeresgruppe A issued the following order:

Subject:

a) Ob.d.H. Gen St d H-Op.Abt.Ia (to Army Group A Command & A.O.K. 9 & 16 *only*)
b) Discussion at Army Group & Command on 3rd September.

Preliminary instruction
for implementation of
Operation 'Sealion'

Preliminary comments

1) The *Commander-in-Chief of Army Group A* is responsible for carrying out the tasks given to the Army in accordance with paragraph a) above. The 16. and 9. Armee are placed under his command for this purpose.

2) The preparations must be organised so that the implementations can take place on the 20th September (until now, 15th September).

3) *Army Group Order No. 1* will follow later; as soon as the still unresolved questions relating to the action deployments and shipping space have been finally cleared up.

4) A.O.K. 9 and 16 are presenting to the Army Groups Command, on the evening of the 10th September, the following:

a) Map 1, scale 500,000, including:
Final assembly of the 1st assault wave
first start of the *first assault* on English soil (without details).
Make-ready for the 2nd Assaults.
Command posts of the 1st assault Armies and Corps.
b) Notification of arrival times and unloading areas of the 3rd assault wave Divisions to be injected into the cross-country advance and brought forward with E-transport.
c) Estimated time schedule for crossing of the 1st and 2nd assault waves.
d) War dispositions, including distribution of the Army troops.
e) Individual wishes.

Tasks

1) The *task* of the Army, in co-operation with the Navy and the Luftwaffe, is to land strong forces in southern England, to smash the English Army, and to occupy London and such other areas of England as are indicated by the situation developing.

2) *The task of Army Group A* is to gain immediate possession of the English coast between Folkestone and Worthing and then to occupy the line running: high ground 15 kilometres north of Folkestone—Ashford—high ground 20 kilometres north of Hastings—high ground north of Bexhill—high ground 10 kilometres north of Worthing. After the arrival of further reinforcements, the Army Group will begin concentrated attacks and will gain possession of the line Thames estuary—high ground south of London—Portsmouth (1st operational objective); pushing forward fast-moving units to the west of London in order to seal off the capital from the south and west, and then immediately develop the attack until gaining possession of the line Maldon (north-west of London)—mouth of the Severn (2nd operational objective).

This heavy pontoon ferry with a Flak combat unit aboard (consisting of an 8.8cm and two 2cm guns) also has had aero engines added to augment its normal method of propulsion. (ECP Armées)

Some barges had the job of shuttle ferries to trans-ship equipment to the beaches from the transports. Although such an operation looked simple when practised in calm water in port, unloading in the open sea while under fire would have made it an extremely hazardous operation. The reinforcing girders and concrete lining added to the floor of the barges are seen to good effect in the picture *left*. (ECP Armées)

3) The task of the 16. Armee, starting out from Rotterdam—Calais (and including both of these) is to gain possession of the Folkestone—Hastings coastal strip (including Hastings) over a wide front, and then occupy the line running: high ground 15 kilometres north of Folkestone—Ashford—Tenderden—Etchingham. Under the protection of this combined bridgehead the strongest possible forces, including tanks, before everything will follow on.

The Dover port installations and the Ramsgate—Deal coastal area, which is important for later landings, is to be captured from the west. Simultaneously with the 1st landing, it is intended to send in parachute troops for seizure of the high ground north of Dover. The strength of these troops will be notified.

4) The task of the 9. Armee, starting from Boulogne—Le Havre simultaneously with the start of the 16. Armee, is to gain possession of the English coast between Bexhill and Worthing, and then immediately thrust forward in conjunction with the 16. Armee up to a line running Hadlow Down—Burgess Hill—Storrington and westwards. Further forces, including tanks as soon as possible, are to be brought in later under the protection of the bridgehead.

The injection of parachute troops for the seizure of Brighton—and if possible the high ground to the north of Beachy Head—is envisaged. Their strength will be notified.

5) *For dispositions*, see Appendix 1 [not reproduced here].
(At the request of the 16. Armee, Gen Kdo. V.A.K. will operate with the 12. and 30. Divisions to form the 2nd assault wave; contrary to the provisions of Appendix 1 as set out above).

6) The harbours available to the Armies as starting points are:

a) *16. Armee:* Rotterdam, Antwerp, Ostend, Dunkirk, Calais. (auxiliary harbours are Nieuport and Gravelines but no loading can be carried out at these).

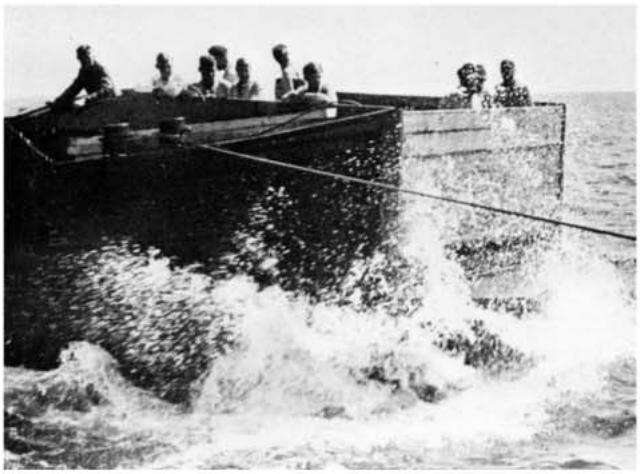
b) *9. Armee:* Boulogne and Le Havre.
Whether smaller units can be brought over from stretches of open coast and estuaries, or from smaller, unlisted harbours, can be decided only by the naval headquarters responsible.
The armies must therefore submit any worthwhile applications in this field to the relevant naval headquarters *before* taking action on them.

7) The allocation of the total shipping space is entirely a matter for the navy.
The armies are anxious to ensure that none of its headquarters intervenes independently in the distribution laid down, or takes over specific portions of the shipping space for other parts of the army on its own initiative.

8) *Final assembly.* The final assembly, disposition of the forces and sequence of the crossings is handed over to the armies.
In this connection, it is absolutely essential to seek the consent of the relevant naval headquarters before final decisions are taken so that the precisely laid down allocation of the required shipping space *agrees* with the Army's plans for assembly and allocation.

Bases for the final assembly and advance across the sea:

a) As numerous command staff as possible should be sent over with the first and second echelons of the first assault wave as once landed, these will take over, organise and lead formations and units that are not compact entities. They will not in the first place be able to count on taking over their own formations as compact units; but rather on leading detachments consisting of several units.



The cutaway prow of each barge was made more or less watertight using planks of wood.

Ramps had to be manhandled into position, another difficult job if there was any sort of a sea running. (ECP Armées)

b) O.K.H.Gen St d H *has agreed* that in addition to the 'U' tank detachments of smaller armoured units from the 2nd assault wave can also be integrated as soon as possible into the 1st wave.
c) In accordance with the various orders issued, numerous 'Flak', intelligence and supply units require to be fitted in at an early date. These special contingents are important and indispensable for the execution of the operation but the shipping space available does not make it possible for *all* of them to be integrated on a complete scale right in the forefront.

Bringing along Flak units at the outset is an urgent priority. Making additional shipping space available is desired. The A.O.Ks. will determine the sequence.
d) The loading of the shipping space with equipment and *materials* must begin in such good time that its termination is ensured by the time when the 'Sealion' code-word is issued.

9) O.K.H. Gen St d H Op.Abt. undertakes to give, before the intended 'S-Tag':
a) 8 days for the pre-warning
b) 3 days for the code-word.

10) *Co-operation with the Luftwaffe*
Initial reference a) remains among the orders in Appendix 3 [not reproduced].

In accordance with this, the 16. Armee is instructed to co-operate with Luftflotte 2, and the 9. Armee with Luftflotte 3. Further orders will follow.

11) The date and the approximate time of day of the 1st landing on the English coast has still to be pronounced.

12) If the 'Sealion' codeword is activated, the command staff of Army Group A is located in the barracks 7 kilometres north-east of Amiens. A *forward* command post on the coast will be reconnoitred, and notified in good time.

For the Army Group Command
The Chief of the General Staff
(P) Blumentritt

(Signed) von Sodenstern

To get the unpowered barges onto the beach, a variety of 'pusher' boats had to be employed, two per barge. The intention was to come ashore on a falling tide as the ramps could only be safely put down once the barge was firmly grounded. On the actual landings the barge would then have had to wait for the next high tide before floating off. (ECP Armées)

The final plan drawn up in mid-September had nine first-wave divisions from the 9. and 16. Armees. The 7. Fallschirmjäger-Division was earmarked to assist in the capture of Dover. Four detachments of submersible and amphibian tanks were to reinforce the first assault. Another new weapon to be introduced was the multiple rocket launcher of 100mm calibre with Nebelwerfer-Regiment 51.

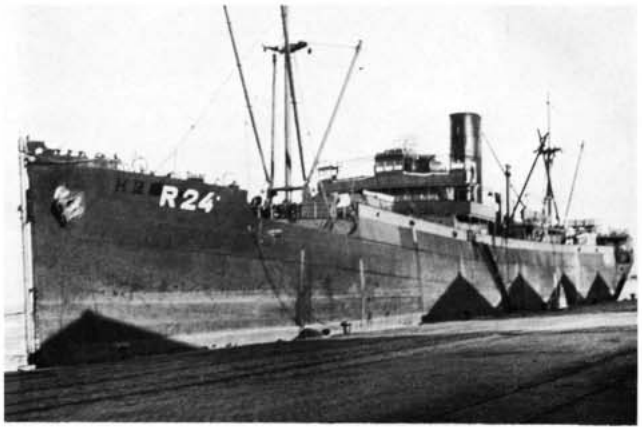
The Embarkation Ports

ROTTERDAM

Rotterdam was the easternmost embarkation port, providing ample space for 49 transports and their 98 towed barges as well as for several hundred reserve barges. The second echelons of 17. and 35. Infanterie-Divisions of XIII. Armeekorps (16. Armee) were to be loaded there for landing in Area B. Other ports in the region like Amsterdam, Vlissingen and Dordrecht were also used for the assembly and training of fishing vessels and barges. One of the men engaged on the work there was Willi Heimersheim. He was ordered to 'Motorbootsabteilung Amsterdam' in August 1940, underwent training at Wesermünde (today Bremerhaven) and was then posted to a flotilla of fishing vessels and former police craft at Dordrecht, exercising with Army troops on Schouwen and Douiveland. After a short period spent on the former Dutch tug *Constantina*, he was sent to Russia to be enlisted in the crew of the former 'Sealion' transport *RO 24* in 1942. She was the former Dutch *Zonnewijk* of 4,499 GRT, built in 1928 in Glasgow and captured by German troops in May 1940. At first she was to be used as a transport in Le Havre but was later earmarked for Rotterdam, her home port. Willi Heimersheim served in her as a stoker until she was torpedoed by the Soviet submarine *SC 310* off Windau in the Baltic on October 7, 1944.

The two armies assigned to Sealion each had two main landing areas within their sectors. The 9. Armee was to come ashore between Worthing and Brighton (Area E) and at Bexhill (Area D) and was to sail from the southern ports of Boulogne and Le Havre (see map, page 6). In the north, 16. Armee had the Folkestone–Hastings strip comprising Areas B and C. Its ports were Rotterdam, Antwerp, Ostend, Dunkirk and Calais. *Above:* **These barges lie at Coolhaven in Rotterdam destined for Area B.** *Below:* **Time changes little: barge traffic 50 years later.**

Impressed vessels from the occupied countries were earmarked for Sealion. *Below left:* ***B 315 Mo*** **was a former police boat at Dordrecht (south of Rotterdam).** *Below right:* **The former Dutch transport *Zonnewijk* became the *RO24*. (Heimersheim)**



ANTWERP

The harbour of Antwerp was as spacious as Rotterdam for the 50 transports and 100-plus reserve barges detailed for the second echelons of VII Armeekorps (also 16. Armee) with 1. Gebirgs-Division and 7. Infanterie-Division to be landed in Area C. Reaching the open sea along the twisting River Schelde would be rather complicated for such a big convoy, especially with the towed barges, and half of the transports in the dock harbour would have to pass Kruisschanz locks, four at a time. As the lights along the Schelde, and also along Nieuwe Waterweg at Rotterdam, were turned off during the night for security reasons, no traffic was possible during the hours of darkness, which resulted in extending the transfer times in the Navy's timetable. The point was discussed at length, as well as the possibility of loading and unloading at night and, later in 1940, the means to instantly turn the lights along the waterways on or off were installed.

It is important to remember that in 1940 the German Army still relied heavily on horse power. This sequence taken at Antwerp is being filmed by the cameraman visible in the shot at the bottom of the page. The pivoting frames for lowering the ramps proved unsuccessful and were not used. (ECP Armées)

Left: **Sealion shipping in Ostend harbour in October 1940 (Kugler).** *Right:* **A significant comparison with the ferry *Saint Charles* beside the same quay as three ships from the Schiaffino fleet were in the Sealion fleet: *H5* ex-*Nicole Schiaffino; H24* ex-*Marcel Schiaffino* and *H25* the former *Ange Schiaffino*.**

OSTEND

Ostend had enough room to accommodate 15 transports, 155 barges including reserves, 25 trawlers and 50 pusher boats. These vessels were to form Convoy 1 and Tow Formation 2 for the transfer of the XIII. Armeekorps with 17. and 35. Infanterie-Divisions to Area B. Because of the shortage of tugs, trawlers had to be used instead at Ostend. Tow Formation 2 would have to leave port on the morning of S-Tag−1 and join Formation 1 which would leave Dunkirk in the afternoon and negotiate the Dover Straits during daylight in order to reach Folkestone before dawn on S-Tag. Two advance detachments of 17. Infanterie-Division, each with the strength of a reinforced battalion, were to land there east and west of the Grand Redoubt, supported by 10 flame-thrower tanks and Tank Detachment B. This comprised 13 PzKpfw II amphibious tanks, 39 PzKpfw III submersible tanks and 12 PzKpfw IV submersibles landing east of Dymchurch. Together with the rest of the first wave from 17. Infanterie-Division, they were then to advance across the Royal Military Canal (for this purpose some of the submersible tanks were to be left sealed) and join forces with the 7. Flieger-Division which would meanwhile have landed by parachute and glider, and then head for Dover which was to be taken on the first day.

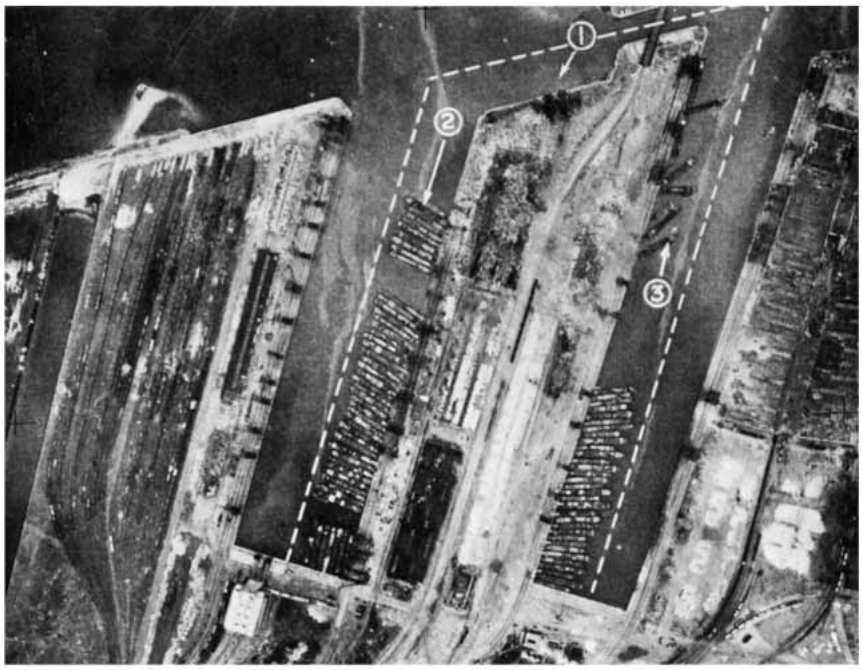
To prevent the blocking of Dover harbour, a special commando task force of 'Lehrregiment z.b.V.800 Brandenburg' aboard 25 fast police craft, was to land directly on the mole in Dover to seize any blockships and attack coastal batteries.

The 35. Infanterie-Division with one advance detachment and one tank detachment, was to cross Romney Marsh, traverse the Military Canal and head for Ashford.

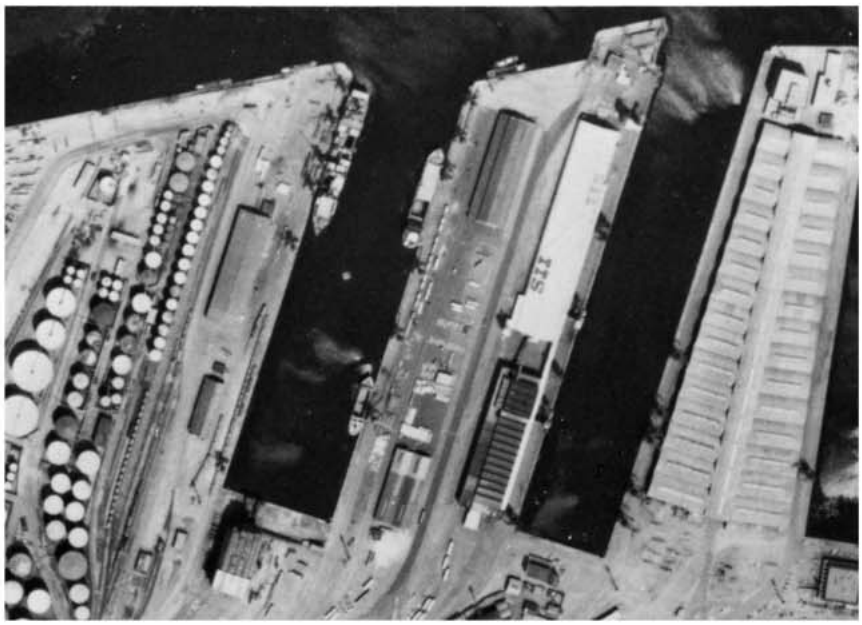
DUNKIRK

This harbour was only included later during the 'Sealion' preparations because of the extensive destruction it had suffered during the evacuation, and because the harbour entrance was blocked. However, due to great efforts by Organisation Todt and 7,000 workers from various salvage companies, it was possible to repair two of the three locks and to remove two of the four blockships. Here were assembled 75 trawlers and tugs, 150 barges and 150 pusher boats of Tow Formation 1.

During the night of September 18, British air raids took a heavy toll in Dunkirk, destroying 26 barges and 500 tons of ammunition.



All the invasion ports were under RAF surveillance and attack throughout September. The picture *above* shows Docks Nos. 4 and 5 in Dunkirk where Bomber Command did considerable damage on the 18th. Annotations are: '1' razed warehouses, '2' large concentrations of barges, and '3' damaged barges. (IWM)



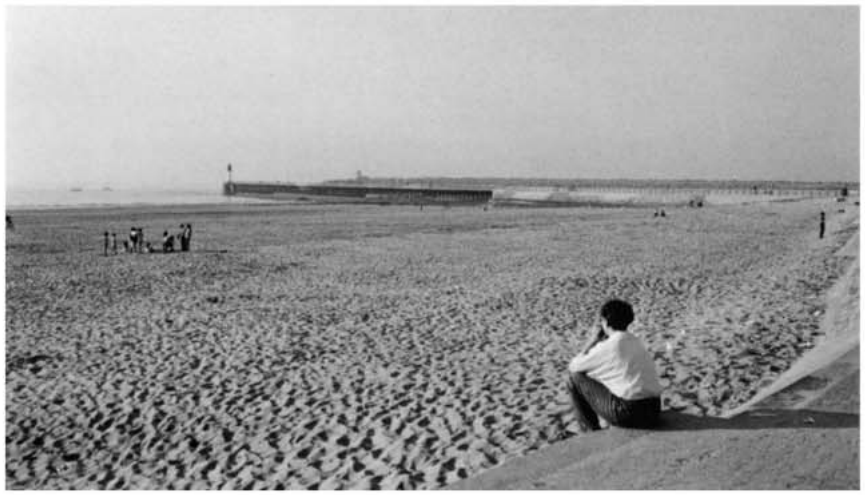
The port has been extensively developed since the war with a tank farm taking the place of the large marshalling yard below Dock No. 5. (IGN)

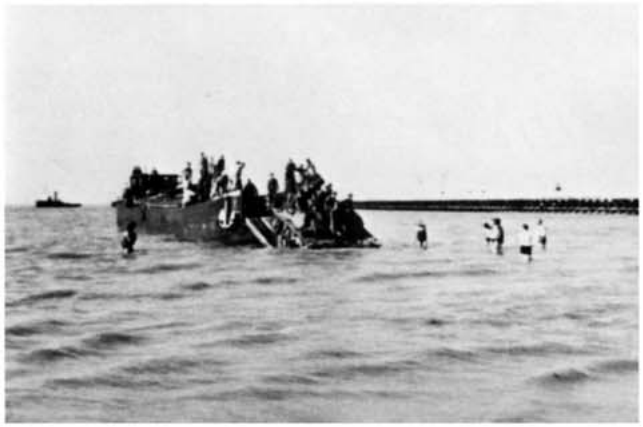
CALAIS

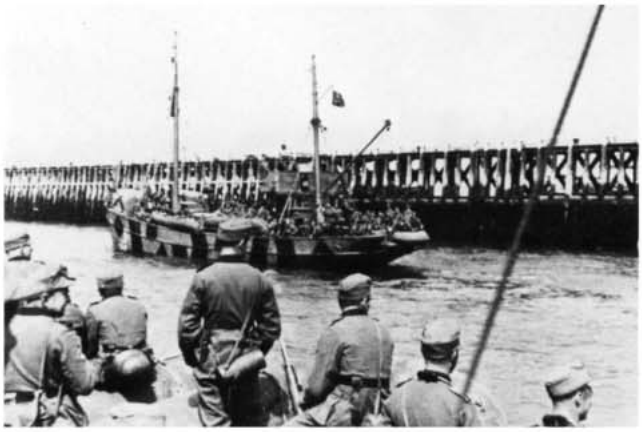
In Calais harbour, the VII. Armeekorps with the first echelons of 1. Gebirgs and 7. Infanterie-Divisions, was to be loaded for Area C. However as Transport Fleet C with 100 tugs, 200 barges and 200 pusher boats so overcrowded the harbour, some of the vessels were transferred to Gravelines. The destination of Transport Fleet C was Rye Bay, east of Hastings, where the 7. Infanterie-Division was to take Rye, cross the River Rother and proceed to Tenterden and Dungeness. The 1. Gebirgs-Division had to take Battle, leaving Hastings to be mopped up later, and then march in the direction of Robertsbridge.

On September 3, Generaloberst Wilhelm Keitel, Chief of the OKW, issued provisional timings for S-Tag, as invasion day was called. This, of course, was dependent on the Luftwaffe achieving air superiority. The earliest date was seen as September 21, with the final green light being given by midday on S–3. The actual order to begin Operation 'Sealion' would be S-Day minus 10, i.e. September 11.

Above and bottom: **At work . . . and play . . . on Calais plage. The firm sandy beach was an ideal training ground — the troops are from the 7. Infanterie-Division. (Kugler)**
Below: **All that was 50 years ago . . . only the playing continues.**







Men of the 1. Gebirgs-Division — spearhead troops for the landings in the 9. Armee sector — set out from Boulogne aboard auxiliary minesweepers. (Kugler)

BOULOGNE

Together with Le Havre, Boulogne was to handle the transportation of the entire 9. Armee, at least for the first wave, because of the lack of suitable ports in the western Channel area. Accordingly, Boulogne was extremely crowded with 165 tugs, 330 barges and 330 pusher boats detailed to transport General von Manstein's XXXVIII. Armeekorps, with 26. and 34. Infanterie-Divisions, to Pevensey Bay. They would be moving on historical ground as Caesar began his invasion of Britain here in 55 BC, and Napoleon, too, gathered his invasion fleet in this port.

Transport Fleet D would have a length of 20 km, and the operation of leaving port alone required ten hours. The 34. Division, landing in Area D between Waller's Haven and Bexhill, had two advance detachments backed by four assault guns, four self-propelled anti-tank guns, and two companies from Tank Detachment C with 40 submersible and amphibious tanks. Five flak combat units with 88mm and 20mm guns, each landing from heavy pontoon ferries, were also assigned to the advance detachments. The division was to take Bexhill from the rear and was to advance on the heights at Ninfield.

The 26. Division, landing in Area D between Langney Point and Pevensey, with one advance detachment similarly equipped to those of the 36. Division, was to take Beachy Head with the help of a commando force from 'Lehrregiment z.b.V.800 Brandenburg' and push north in the direction of Heathfield and Uckfield.

LE HAVRE

The structure of Landing Fleet E operating from Le Havre differed from the others due to the fact that it was split into two parts. A large advance detachment would land from 100 coasters and 200 motor fishing vessels, while the bulk of the force comprised two convoys each with 25 transports and 50 barges. There were also 25 trawlers with 75 empty barges to unload the transports. The harbour was so crowded with the 600 vessels, some of which were lost in air raids, that many of them were dispersed to Rouen, Caen, Fécamp and Honfleur, as well as Trouville and Dieppe.

It was estimated that it would take 55 hours for the advance detachment to leave port, and 72 hours for the convoys as only one lock was suitable for the big ships which were also dependent on the tides. The advance detachment was to transport one regiment each of 8. and 28. Infanterie-Divisions and 6. Gebirgs-Division of VIII. and X. Armeekorps to Area E — east of Brighton to Rottingdean, Seaford and Cuckmere Haven — reinforcements to be landed either there or in Area D depending on the situation. One company of Tank Detachment D and four assault guns as well as four flak combat units were to back up the first assault.

On September 10 Hitler put off making the decision to commence the count-down until the 14th as there was still no positive sign of supremacy in the air war. Since the 7th, London had been under attack and it was hoped that bombing, or the threat of bombing, would soon bring about a collapse in resistance as it had done already in the case of Warsaw, Copenhagen and Rotterdam. When the 14th arrived Hitler concluded that bad weather had so far prevented the attainment of complete air superiority and he postponed giving the OK until the 17th, September 27 being the last favourable date that month. With the major air battles of September 15 and nightly attacks by Bomber Command on the Channel ports, it was obvious that the Royal Air Force was far from being defeated and the Kriegsmarine was too weak to proceed on its own. The weather prospects were also unsettled for the following week. Consequently, on the 17th Hitler issued a directive to postpone Sealion 'until further notice'. After the heavy raid on Dunkirk that night, the decision was also made to disperse the barges. The picture *below*, taken in Le Havre in 1941, shows landing barges alongside the transport *Moero*. Note the sunken ship in the background. (Kugler)

A unique preservation in southern Germany. The Pionierlandungsboot was a purpose-built landing craft which could be split longitudinally *(left)* for transportation by rail. Although only two of the first Type 39 were ready in time for Sealion, several hundred were produced and used operationally. *Right:* The landing craft restored and preserved at Oberschleissheim, (*L534*), is a Type 41 which was rescued by the efforts of Randolf Kugler (from whom many of the pictures in this article have come). Unfortunately the split-hull feature could not be called upon during its overland move from Schleswig in 1983 as the two halves had long been welded together. Consequently the 6-metre-wide load had to be transported in three nightly stages along the autobahn, the tunnel under the Elbe being a particularly difficult obstacle on the first night as there was only 15cm (6 inches) clearance below the roof! *L534* was dedicated as a memorial to German amphibious forces on July 19, 1984.

Preservation

PIONIERLANDUNGSBOOT *L534*

The development of the Pionierlandungsboot started in 1938. German engineers asked for a motorised landing craft capable of carrying one tank, the boat itself having to also be capable of being transported by rail. An inland yard, Bodanwerft at Bodensee in south Germany, submitted a design with the hull split longitudinally. Each part had its own diesel engine and could float so that the two halves could be assembled in the water.

Only two of the Type 39 boats were ready for the 'Sealion' preparations but they amply demonstrated what might have been. Some 450 of these LCM-like boats were later built and saw service in all theatres of war, especially during the landings on the Greek islands of Kos, Rhodes and Leros in 1943; and during the evacuations from the Kuban bridgehead to the Crimean pensinsula, Sicily, Corsica and Sardinia.

L534 was a Type 41 and was commissioned on March 15, 1945. She was assigned to Pionier-Landungsbattalion 771 and helped to ship German refugees from East Prussia to the west. After the war she became a workhorse at Deutsche Werke Hamburg and was later bought by the salvage company Jaich at Lindaunis in the Schlei estuary in the Baltic. When she was about to be sold to Africa, Randolf Kugler, a German amphibious forces historian, managed to interest the West and East Prussian Foundation in its preservation, which bought the boat and had it transported overland to Oberschleissheim near Munich in June 1983. The journey had to be done using the autobahn at night as the two hull parts had been welded together for many years and could not be separated. Today it stands at the rear of Oberschleissheim Castle on a historic airfield where the Deutsches Museum, Munich, is planning to exhibit part of its air and space collection.

FRANZ CHRISTIAN

In July 1940, en route to Wiesbaden, Franz Fischer on his motor barge *Franz Christian* was intercepted by a police launch with the order: 'Stop at once! This boat is commandeered!' Fischer hove to but, as nothing happened for several hours, he took a chance and resumed his journey. At Braunschweig, he checked with the police but, as nothing was known, he pressed on.

Near Datteln he was stopped again but this time was told simply to deliver his cargo of paper and then sail to a yard at Mainz for conversion. There the women living on board were sent home with the help of the social welfare while the sailors were assigned to Dutch barges as skippers due to the lack of personnel. Fischer's new crew included an alpine herdsman and a butcher!

Built in Lauenburg in 1929, *Franz Christian* with her capacity of 289 tonnes and strong 200hp diesel was ideally suited as an auxiliary landing boat. After the conversion she sailed to Boulogne where she was registered as *B 8 Pmot*. Landing exercises were held soon after she arrived. When Fischer left her in 1942 she was sent to the 11. and 12. Landungsflottille in the Baltic, and she later helped to evacuate German refugees from the east.

At the end of the war she was found beached in Denmark, from where she was returned to her owner. Fischer had her rebuilt again in her original condition and sailed with her until 1975. After remaining idle for several years, an impending threat to break up the boat led the Westfälisches Industriemuseum at Bochum to become interested and they bought the *Franz Christian* in 1986 for preservation at the historic ship-lifting device at Henrichenburg where she has been on display since May 1989.

The *Franz Christian* *(right)* is possibly one of the last genuine Sealion barges, now preserved at the historic ship-lift at Henrichenburg on the Wesel-Datteln Canal north of Bochum. The welded repair where the bow was removed can be seen below the anchor and bollard (see also centre pages).

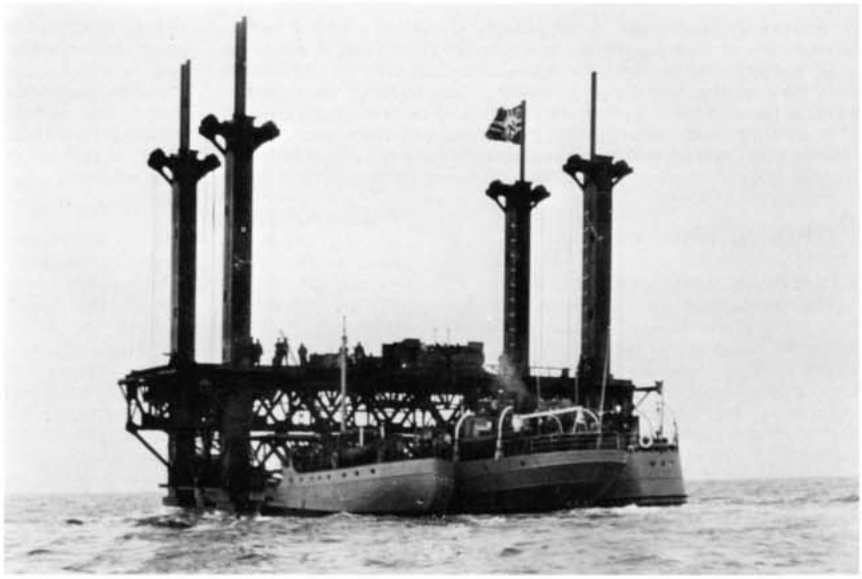
THE GERMAN 'MULBERRY'

Visitors to the Channel Islands prior to 1978 may recall seeing the iron 'German Jetty' at Braye Harbour, Alderney. Until a few years ago it was believed that it was constructed merely to fulfil the requirements of Alderney Harbour during the war, but it is now known that it was originally designed as a landing bridge for 'Sealion'. Although records have not been found concerning the ideas behind the construction, it is probable that the Navy ordered a competition to solve the problem of unloading the transports more quickly rather than using the cumbersome barges. Although Hitler had postponed 'Sealion' in September 1940, he wanted to continue the pressure on Britain and certain projects were kept in being. One proposal by the companies, Dortmunder Union and Krupp Rheinhausen, was for landing bridges to allow transports to unload directly onto the beach-head, and these were tested in July 1941 off Zeebrugge.

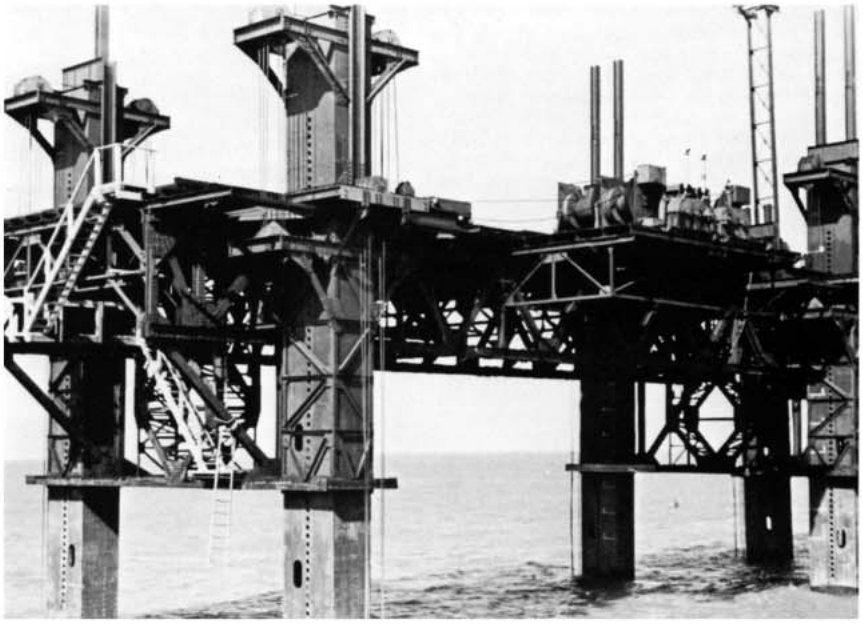
The Dortmunder Union design was a conventional construction which was based on pier trestles that could be brought to the landing area suspended between two coasters connected by long beams, and lowered to the seabed at the intended location. One of the piers was used as a working platform to erect the superstructure. A bridging unit was then brought in by two coasters, similarly supported as the piers, and lifted into position between two trestles. It was envisaged that 28 days would be required to build a landing bridge of this type.

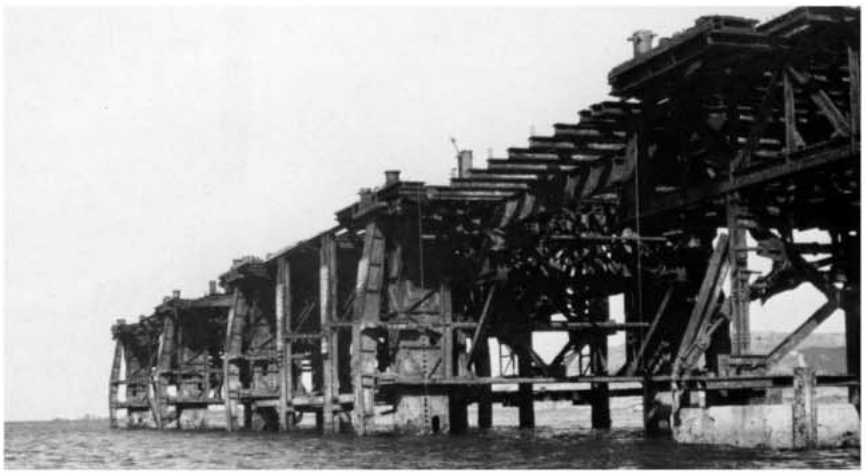
The design produced by the Krupp works at Rheinhausen was altogether far simpler and quicker to assemble, using naval personnel only. It consisted of a platform which was transported to the landing beach by means of three linked coasters. At the intended location, the four legs of the platform were lowered to the seabed, whereupon the platform was raised sufficiently to allow the ships to float free. Eight rammed posts then secured the legs before the platform was raised to the common deck level. The spaces between the platforms were to be spanned by engineer bridges, as well as the distance from the shore which was determined by the draught of the coasters. It was possible, without the need for specialised personnel, to make the Krupp design ready for use at the landing beach within one day.

During the summer of 1941, trials of the two designs were held in the sea off the Belgian port of Zeebrugge. On July 30, high-ranking Army and Navy officers inspected the heavy landing bridges, and agreed that the Krupp units were the more effective. Orders for producing more units were cancelled, however, as the situation in the war



Although the invasion had merely been postponed, it was finally abandoned as far as 1940 was concerned on October 12 with the onset of winter. However, troops were to be retained at low readiness for undertaking Sealion in the spring. By then Hitler had other plans but he instructed that invasion preparations were to be maintained for deception purposes to help disguise his true intentions in the East. Certain development projects were still maintained, however, one being what could be construed as the forerunner of the Mulberry harbours of 1944. (Bundesarchiv)





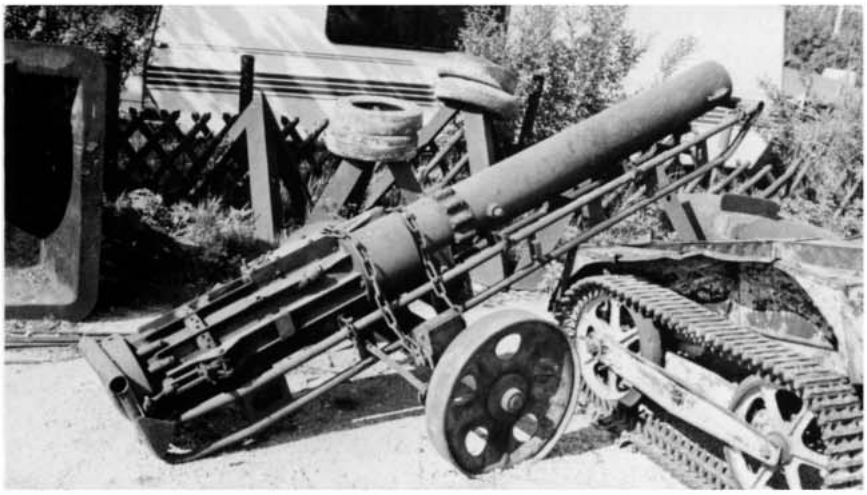
We have seen the difficulties which would have to have been faced using ordinary merchant ships and improvised barges to land troops and supplies on the beach-head. To overcome the problem, two German companies came up with the idea of a transportable jetty or pierhead which could be sunk in position so that ships could unload direct from deep water. Although the Krupp design (seen *opposite* undergoing tests off Zeebrugge in 1941) was considered superior to the Dortmunder Union trestle structure, by then the invasion of Britain was a non-starter and the sections were taken to Alderney where the lack of unloading facilities was hampering the extensive works being undertaken to fortify the island *(see The War in the Channel Islands — Then and Now)*. *Left:* This picture was taken shortly after the war — the sub is British! (Colin Partridge) *Right:* In the foreground the Dortmunder Union structure, with the Krupp platform behind. (Ken Tough)

had changed. Now the French coast was to be fortified against a possible Allied invasion. The Channel Islands were to play an important rôle in these defensive preparations, with their coastal batteries protecting the inshore shipping routes and the whole bay of St Malo. It was soon found that the harbour facilities in Alderney were inadequate for unloading the enormous quantities of materials required for the fortifications.

After having satisfactorily survived the winter storms, the two landing bridges were brought to Braye Harbour and installed as a permanent extension to the existing quay in the summer of 1942. For this purpose, the bridges had to be strengthened and hydraulic fenders were fitted as well as three travelling cranes and rails for a narrow-gauge railway.

The German Jetty survived the war and remained in use for some years afterwards. Eventually, the three cranes and the timber decking were removed. By the 1970s, the steel superstructure was in such a dangerous state of corrosion that the States of Alderney took the decision to demolish it in 1978. It is, perhaps, sad to reflect that one of the last material remnants of the German invasion preparations was destroyed at such a late date and before its real purpose had been identified.

Exposure to the elements for 30 years had taken its toll, and in 1978 it was decided that complete demolition *(above)* was the safest option. Unfortunately the true purpose of the pier had not then been realised — even in its parlous state it would have been a unique addition to the wartime heritage of the Islands. (Ken Tough)



However, it appears that one part may have survived in David Davis's museum at Batterie Todt *(see After the Battle No. 29)*. The relic *left* looks suspiciously the same as the ram *right* being loaded to fix the platform to the seabed. (ECP Armées)

TYPHOON MEMORIAL AT NOYERS-BOCAGE

By Denis Sweeting

In 1986 *After the Battle* featured one of the Normandy Typhoon recoveries by Jacques Bréhin — that of Flight Sergeant Reg Thursby. Now, four years later, a memorial has been unveiled at Noyers-Bocage, a small village ten miles south-west of Caen, commemorating all the 150 Typhoon pilots who were killed during the ten weeks of the Battle for Normandy.

The memorial has been erected by the efforts of Jacques Bréhin, President of the Association pour le Souvenir des Ailes de la Victoire de Normandie — the Association for the Memory of the Wings of the Normandy Victory. Over the past five years, M. Bréhin has excavated seven crashed Typhoons and in two cases found the remains of the pilots *(see After the Battle No. 51)*. They were subsequently given military funerals and reburied in the Commonwealth War Graves Commission Cemetery at St Charles-de-Percy. The engines and the cannon have been given to museums in Normandy and, in one case, sent to Canada.

Top: **Pilots of No. 198 Squadron in February 1944 — a snapshot from Denis Sweeting's book *Wings of Chance*. From L-R: Cliff Abbott, 'Pee Wee' Williams, Geof Eagle, Ted Vallely, 'Judge' Hardy, Lawrence, Johnny Baldwin the squadron commander, Peter Roper, the author, Norman Pye, Guy Plamondon and Jack Scambler. Nicky and Satan are the dogs.** *Above:* **George 'Judge' Hardy, George Lane (shot down near Vimoutiers on August 19) and the author return to one of their old Normandy airstrips, 'B7' at Martragny *(left)*, now remembered by a memorial at the side of the road to the village.**

Much has been written and recorded of the Battle of Britain, and those of 'The Few' who lost their lives in 1940. The Typhoon pilots in the Battle for Normandy have so far been overlooked, yet their losses were proportionately just as great: 150 pilots lost from the 20 squadrons involved over a similar period. This picture of No. 198 Squadron was taken in April 1944 but within a few weeks 10 of them were dead and two prisoners-of-war. Denis Sweeting has compiled the Roll of all those fellow pilots killed which will form the basis for the memorial panels at Noyers-Bocage: 79 were British, 41 Canadian, 8 Australian, 6 South African, 5 New Zealanders, 4 Rhodesians, 3 Belgians and 1 each from Ceylon, France, India and Norway.

TYPHOON PILOTS KILLED IN THE BATTLE FOR NORMANDY: MAY–AUGUST 1944

No. 124 Wing

G/Capt. C. H. Appleton DSO, DFC	12.08.44

No. 136 Wing

Wing Cmdr J. M. Bryan DFC and Bar	10.06.44

No. 146 Wing

Wing Cmdr E. R. Baker DFC	17.06.44

No. 137 Squadron

F/O I. C. Hutcheson	27.08.44
F/Lt M. Wood	18.08.44

No. 164 Squadron

F/Sgt G. M. Fisher	06.07.44
F/Sgt G. D. Fowell	06.07.44
F/Lt A. E. Napier DFC	14.08.44
F/O A. E. Roberts	06.06.44
F/O G. R. Trafford	25.08.44
F/Sgt R. A. E. White	25.08.44

No. 174 Squadron

P/O E. G. Boucher	05.08.44
F/Lt F. A. Grantham DFC	14.08.44
F/Lt L. McNeill	12.06.44
F/Sgt H. J. Somerville	29.07.44
F/Sgt E. W. J. Taylor	10.08.44
F/O W. C. Vatcher DFC	26.07.44

No. 175 Squadron

F/O J. M. Cowie	30.05.44
F/Sgt R. C. Dale	09.07.44
P/O S. S. Finlayson	21.05.44
W/O K. M. Hopley	30.07.44
P/O O. D. Leitch	15.06.44
F/O P. S. G. Moran	14.08.44
W/O J. H. Pugh	05.06.44

No. 181 Squadron

W/O R. D. Gilbert	19.08.44
F/Sgt G. J. Howard	06.06.44
F/Lt G. J. Jones	16.06.44
P/O G. E. Rendle	07.06.44

No. 182 Squadron

F/Lt A. J. Hay	18.08.44
Lt H. G. Jennings	19.08.44
F/O W. J. Kasubeck	09.08.44
Capt. G. H. Kaufman DFC	18.07.44
W/O H. C. B. Talalla	29.07.44

No. 183 Squadron

F/O R. D. Ackers	18.08.44
F/Lt G. C. Campbell-Brown	17.08.44
F/Lt H. W. Evans	06.06.44
F/O M. H. Gee	06.06.44
P/O G. F. Humphrey	17.08.44
S/Ldr The Hon. F. H. L. Scarlett	12.07.44
F/Sgt T. W. Stokoe	01.08.44
F/O A. R. Taylor	06.06.44
W/O W. F. Tollworthy	09.08.44
F/O J. Ralph	23.05.44

No. 184 Squadron

F/O R. J. Currie	18.08.44
F/Lt D. H. Gross	18.08.44
F/Lt H. M. LaFlamme	30.07.44
W/O G. C. Polkey	25.05.44
F/Sgt J. J. Rowland	07.06.44

No. 193 Squadron

F/Sgt K. G. Hodnett	25.06.44
F/O J. A. Inglis	12.06.44
W/O J. MacCartney	10.08.44
S/Ldr D. G. Ross DFC	05.06.44

No. 197 Squadron

F/Lt L. S. Bell	18.08.44
P/O L. S. Clark	05.07.44
F/O H. W. Coles	24.05.44
F/O D. E. F. Potter	07.06.44
F/Sgt D. J. A. W. Price	17.08.44
F/Sgt M. C. Richards	13.06.44
P/O J. Watson	17.06.44

No. 198 Squadron

F/Sgt E. L. Bartley	15.06.44
F/Sgt P. S. Barton	23.06.44
F/Sgt F. Bonnet	19.08.44
F/Lt J. G. Champion	31.07.44
P/O R. Crouch	14.06.44
S/Ldr I. J. Davies DFC	22.06.44
P/O J. S. Fraser-Petherbridge	20.06.44
F/O H. Freeman	24.05.44
F/O J. T. N. Frost	20.08.44
P/O D. W. Mason	18.06.44
F/Sgt J. Milne	08.06.44
S/Ldr J. Niblett DFC	02.06.44
W/O G. J. Stokes	07.06.44
W/O C. E. Stratford	22.08.44
F/Sgt R. A. Thursby	09.08.44
P/O E. Vallely	24.05.44

No. 245 Squadron

S/Ldr J. H. Collins DFC	11.08.44
Lt W. A. Gale	17.08.44
F/Lt L. J. Greenhalgh	07.06.44
Sgt D. J. Lush	02.06.44
F/Lt A. E. Miron	17.08.44
F/Lt W. E. Reynolds	13.07.44
F/Sgt L. A. Ryan	18.08.44
F/O R. E. Temple	07.08.44

No. 247 Squadron

F/Lt W. F. Anderson	20.06.44
W/O D. L. Burke	15.07.44
F/O A. E. Diggins	18.08.44
F/Lt R. Guthrie	18.08.44
P/O R. B. Hemmings	08.08.44
F/Sgt L. B. Morgan	25.07.44
F/Lt G. C. Robinson	15.07.44
Sgt S. R. Ryen	18.07.44

No. 257 Squadron

S/Ldr W. C. Ahrens	16.07.44
F/Sgt R. R. Blair	06.07.44
S/Ldr R. H. Fokes DFC, DFM	12.06.44
P/O G. Turton	22.06.44
F/Lt J. F. Williams DFC	26.07.44

No. 263 Squadron

F/Lt P. M. Bell	18.08.44
F/O A. W. Campbell	25.08.44
F/Sgt J. Charlton	24.06.44
S/Ldr H. A. C. Gonay	14.06.44
F/O W. W. Heaton	09.06.44
F/O J. A. Hodgson	07.07.44
F/O L. Parent	07.06.44
F/Lt H. M. Proctor DFC	24.08.44
W/O A. J. Ryan	24.06.44
P/O S. D. Thyagarajan	25.08.44

No. 266 Squadron

P/O I. H. Forrester	28.07.44
F/Sgt J. C. Harrold	19.07.44
F/Sgt W. R. Love	17.08.44
F/Sgt R. McElroy	19.07.44
P/O J. H. Meyer	19.07.44
F/Lt R. W. Nesbitt	12.06.44
F/Sgt A. O. Holland	19.05.44

No. 438 Squadron

F/Lt T. A. Bugg	12.08.44
F/Lt R. M. McKenzie	18.07.44
F/O D. K. Moores	03.08.44
F/O W. H. Morrison	15.08.44
F/Lt L. E. Park	27.06.44
F/O G. H. Sharpe	18.08.44

No. 439 Squadron

F/O E. J. Allen	12.08.44
F/O J. Kalen	18.07.44
F/O R. O. Moen	12.08.44
F/O R. A. Porrit	19.08.44
F/Lt J. W. Saville	05.06.44
F/Lt W. K. Scharff	19.08.44
F/O F. M. Thomas	08.07.44

No. 440 Squadron

F/O L. R. Allman	06.06.44
F/O J. S. Colville	18.08.44
F/O J. F. Dewar	12.08.44
F/O S. V. Garside	07.06.44
F/Lt J. G. Gohe	12.06.44
F/Lt G. W. Hicks	08.08.44
F/O J. Lippert	30.07.44
W/O C. J. McConvey	16.07.44
F/O R. B. M. McCurdy	13.08.44
F/O W. J. Mahagan	07.06.44

No. 609 Squadron

P/O R. K. Adam	31.07.44
F/Sgt R. Ashworth	29.07.44
F/Sgt L. E. Bliss	11.07.44
P/O J. D. Buchanan	27.07.44
F/Lt M. L. Carrick	18.08.44
F/Sgt L. P. Fidgin	13.05.44
F/O R. H. Holmes	27.06.44
P/O P. M. Price	27.07.44
F/Lt R. J. H. Roelandt	26.08.44
F/O G. A. Rowland	29.06.44
F/O D. L. Soesman	11.05.44
P/O J. K. Stellin	19.08.44
W/O F. L. Taylor	15.08.44
F/Lt R. L. Wood	11.05.44

The unveiling of the memorial on June 9, 1990 was preceded by a Mass in the local church which was attended by M. Triboulet, the French Government Minister responsible for the Comité du Debarquément which assists in the development of museums and the erection of memorials commemorating the Normandy campaign. Also attending was the Mayor of Noyers-Bocage, several ex-Typhoon pilots led by General Paul Ezanno, now retired from the French Air Force, who was the commanding officer of No. 198 RAF Typhoon Squadron during the Normandy battles. A Guard of Honour was provided by the French Air Force and several hundred local residents were also present. After the unveiling doves of peace were released.

The memorial is sited on a grassed area alongside the N175 road from Caen to Villers-Bocage. There was very heavy fighting in this area in July 1944 when the British Army was trying to break through and cut the road which the Germans were using to send reinforcements to try to stop the American advance. The Typhoons had many successes against the armoured and supply columns along this stretch of road. The village of Noyers-Bocage was completely destroyed by the end of the fighting including one of its two churches. The village was rebuilt but not the church and a grass area in the cemetery now shows where it stood. A Typhoon pilot is buried in this cemetery, Flying Officer W. J. Mahagan, a Canadian from No. 440 Squadron.

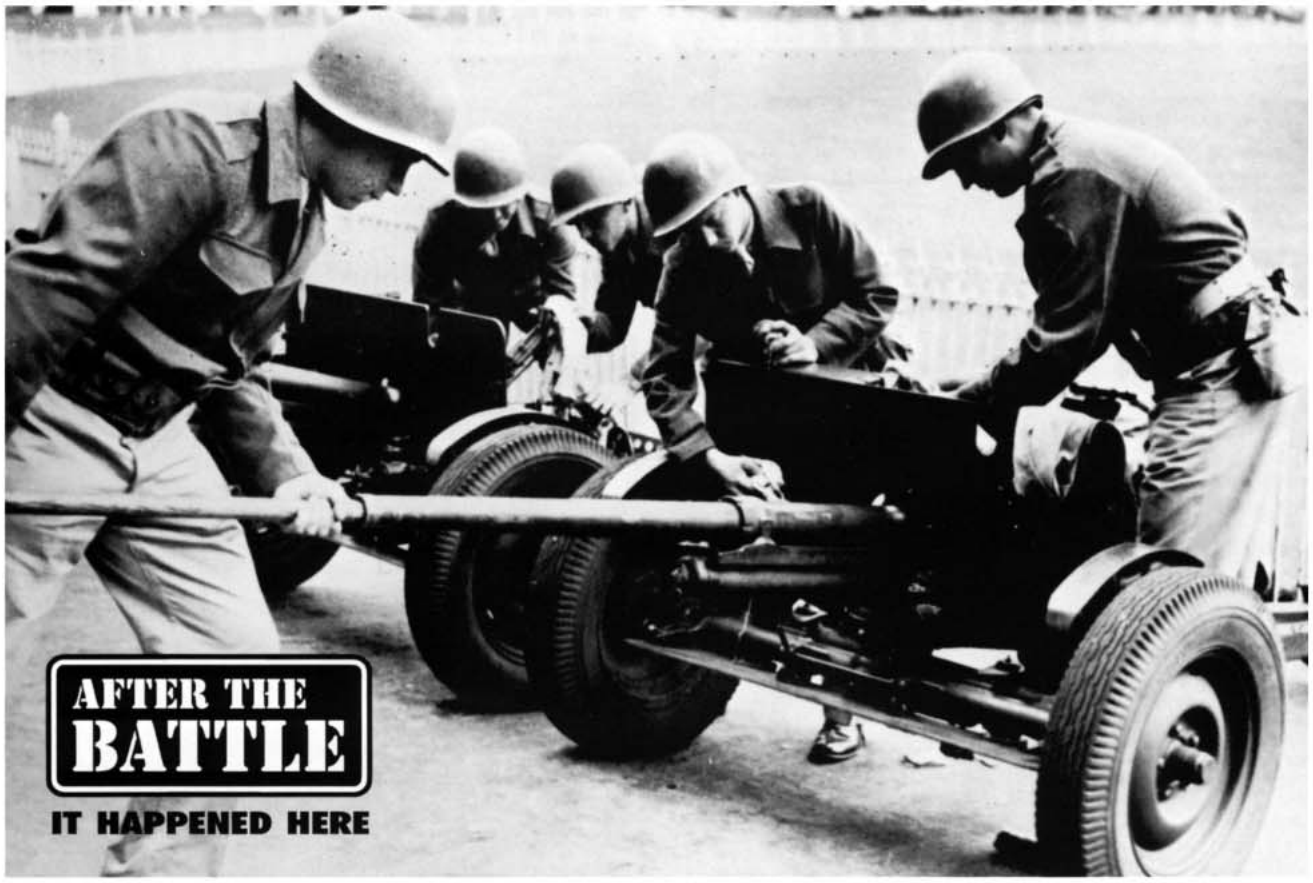
The memorial is very striking, being constructed of three large arrow heads of black marble three metres high, mounted in a circle pointing to the sky and surrounded by flower beds. However, it is not yet complete as M. Bréhin is endeavouring to raise more funds to enable a wall of Normandy stone to be built which will carry panels engraved with the names of the 150 fallen pilots who came from eleven Commonwealth and European countries.

Noyers-Bocage lies on the N175 — the main route from Caen to Villers-Bocage — in an area which regularly received the attention of the Typhoons of the 2nd Tactical Air Force. The grave of a Canadian from No. 440 Squadron lies in the local cemetery: that of Flying Officer Wilfred Mahagan, killed on D+1.

Denis Sweeting, DFC, has now published his own autobiography 'Wings of Chance' which includes a fascinating chapter on operations in Normandy. Signed copies are available direct from Denis Sweeting, 17a Shenley Hill, Radlett, Herts, WD7 7AT, price £13.95 including post and packing.

Readers who would like to send a contribution for the completion of the Noyers-Bocage memorial should send their donations either c/o Denis Sweeting, or direct to the Association pour le Souvenir des Ailes de la Victoire de Normandie, Vendes, 14250 Tilly-sur-Seulles, France.

The splendid memorial which was unveiled by the local Mayor and General Paul Ezanno on Saturday, June 9, 1990 (see rear cover) was the brainchild of Jacques Bréhin who has been involved in the research and excavation of Typhoon wrecks in Normandy for the past five years. Bearing in mind that detailed records of crash positions are non-existent, this is no easy task. To date he has found the following: MN125 (Flight Lieutenant Peter Roper who baled out wounded) of 198 Squadron at Monts-en-Bessin; JR256 (Flight Sergeant Reg Thursby killed) of 198 Squadron at Ste. Marguerite-de-Viette; MN667 (Flight Lieutenant Frank Holland survived and escaped), 184 Squadron, at Croissanville; MP137 (Flight Lieutenant Arthur Miron killed), 245 Squadron, at Hôtels-Sainte-Bazille; JP656 (Flight Sergeant John Rowland killed) from 184 Squadron at Bieville-Quetieville; MN464 (Flying Officer Frank Thomas killed) of 439 Squadron at Vienne-en-Bessin; and MN809 (Flight Lieutenant William Anderson killed) of 247 Squadron near Cheux. The memorial was first proposed in 1987 by Denis Sweeting and so far has cost upwards of £25,000. A further 180,000 francs (£20,000) is required to complete it.



CRICKET THE AMERICAN WAY

By David M. Green

Prior to the Second World War, the Melbourne Cricket Ground (MCG) was a sports stadium playing host to Australian Rules football and cricket match competitions. The outbreak of war, however, provided another use for the complex. The renowned centre wicket, more familiar to the sound of willow striking leather, now resounded to the cacophony of sounds arising from an encamped US Marine Division.

The bombing of Pearl Harbor by the Japanese on December 7, 1941 brought the United States of America into the Second World War. The bombing of Darwin ten weeks later *(see After the Battle No. 67)* made their intentions clear and a Japanese invasion of Australia seemed imminent. To counter this threat, American troops arrived in Australia early in 1942 to bolster the defences and to prepare for future offensive operations.

The MCG had been requisitioned for the war effort in early April 1942 and for the newly-arrived Americans it became one of their staging camps. Central to the city of Melbourne and providing plenty of sheltered floorspace, it was the temporary home to thousands of US Servicemen.

First occupants of the MCG were from the United States Air Force, and on April 7, 1942 it became Camp Murphy in honour of an early casualty of the war, Colonel William H. Murphy. Midway through that year the USAAF vacated the ground and United States Marines took up residence. Camp Murphy thereafter became Camp Ransford in recognition of the secretary of the Melbourne Cricket Club, Vernon Ransford.

Melbourne was in the midst of a friendly invasion as more and more American troops arrived and at one point there were 14,000 soldiers based in the MCG. Conditions in the concrete grandstands were primitive, designed for the daytime spectator rather than the inhabitant. Fibro-plaster sheeting was employed to shield the exposed grandstand frontage. A wooden floor was laid over the road running beneath the Southern Stand which was dubbed 'Pneumonia Alley' by those who slept there. Kitchens were installed as well as boilers and refrigeration facilities. Hundreds of small tent heaters provided comfort against the cold.

Existing buildings were utilised in a manner never intended. The enclosed Bay 18 of the Southern Stand was converted into a cinema, and the former umpires' dressing room became the gaol. The changing rooms

The Melbourne Cricket Ground, then and now. The build-up for war in contrast with the preparations for an international test match.

Conditions were miserable on and off the pitch. *Left:* **These Marines are playing gridiron at the MCG — a strange game to the Australians as much as Australian Rules Football was to the Americans, So that both nationalities could compete, a compromise was reached and modified rules from both games incorporated into a new game: Austus.**

in the Grey Smith Stand housed the armoury and the tearoom became the PX. The former Melbourne Football Club gymnasium was pressed into service as the medical centre. Not surprisingly, the comfortable Members' Stand Long Room was occupied by the officers with the sergeants on the floor above.

A dance was held each Saturday for the officers in the Long Room, whilst the enlisted men would wave from the stands to the girls waiting outside. Although censored in the press, the whereabouts of the Americans was soon common knowledge and a steady stream of taxis and women shuttled back and forth from the stadium.

The people of Melbourne welcomed the arrival of the 'Yanks' with open arms. Newspapers proclaimed the Marines 'The Saviours of Australia'. Although not required to billet the Servicemen, many Melbourne residents warmly invited Marines into their homes and the resulting appreciation and friendship was such that the First Marine Division's mail to Melbourne exceeded that to the United States for more than a year after it had left the city.

The influx of the Americans resulted in many relationships forming between the local womenfolk and the smartly dressed foreigners. Tension grew, with many Australian Servicemen beginning to resent the manner in which the Yanks had arrived and taken over. Arguments and brawls erupted, especially after the 9th Australian Division had returned home after serving in the Middle East. This situation yielded propaganda material for the Japanese who exploited the ill-feeling in a series of pamphlets, one in particular depicting an Australian girl in the company of an American soldier whilst an Australian soldier was fighting overseas.

In an attempt to defuse the increasingly hostile situation and promote a sense of camaraderie, Major General Rupertus (Commanding General of the First Division from July 8, 1943, successor to General A. A. Vandegrift) called upon band-leader, Captain Leon Brusiloft, for ideas. An open-house party at the MCG was suggested but with several conditions, in particular that beer was to be served from paper cups and that there was to be an absence of MPs.

The bays beneath the stands, while ideal for equipment storage, were cold and draughty when it came to using them for sleeping accommodation.

Although the concourse to Bay 10 has long since been stripped of its beds and machine guns, many of the painted signs on the walls have been retained.

We are told today that Australians wouldn't give a XXXX for anything else, although in March 1943 it was a party with American beer which was held on the hallowed turf in an effort to bring both sides to a better understanding.

The party was held in mid-March 1943, the souvenir programme entitled 'US Forces Welcome Australian Forces'. Over 9,000 Australian and American soldiers attended. Gates opened at 6.30 p.m. and, although initially cautious, both nationalities soon mixed freely enjoying the beer and first-class entertainment. The event was broadcast nationwide and via short-wave to the US and England. A tall story contest (won by Leading Signalman Laurie Smith in the Australian section and Sergeant Marvin J. Swanson in the US section) was staged and the winners presented with a silver beer pot.

Violence was absent and the party was the success that the organisers had hoped for. Harmony prevailed in the city and a sense of regret was noticeable when the 9th Australian Division was hurriedly transferred to the serious situation in New Guinea.

The Marines moved out of the MCG on November 4, 1943. The First Marine Division had launched the opening American offensive of the war at Guadalcanal and went on to fight at Cape Gloucester, Peleliu and Okinawa. It was in preparation for the invasion of Japan when the Japanese surrender was accepted.

Next occupant of the MCG was the Royal Australian Air Force when Camp Ransford changed its name once again to become Personnel Depot No. 1. The RAAF used the ground to billet airmen returning from overseas and for those about to depart and, following the cessation of hostilities in 1945, the MCG was utilised as a service discharge centre.

The RAAF left the MCG on October 27, 1945, and the following August witnessed the first post-war sporting event: an Australian Rules football match.

EMBARKATION PERSONNEL
BIRDUM POOL
BAYS 2-3
BAYS 4-7
INSTRUCTIONS.
1. Personnel of Both Sections Sleeping in Barracks Must Rise at Reveille.
2. Bays Must be in Inspection Order by 07-40 hrs Daily, Except Wednesday.
C.O's Inspection at 07-30 hrs.
3. Personnel Must be in Correct Bays at all times.
4. All Blankets & Gear Must be placed in Correct Positions as shown in diagram.
5. All Rubbish to be placed in bins provided.
6. Personnel Must Not enter bays at any time unless in possession of Chit obtainable at Section Orderly Room.
O.C. Embarkation

The MCG authorities have recently established a museum at the ground, one section being devoted to the wartime period and featuring a re-creation of the scene as it was in the Southern Stand.

Reminders of the wartime use of the Melbourne Cricket Ground are still visible today. The Southern Stand still bears signs of the military occupation and the recently opened MCG museum there has a section devoted to its wartime rôle. Two plaques recording the USMC and RAAF presence adorn the entrance to the Members' Stand, where patrons now enter, and where US officers once escorted young ladies to a Saturday night dance.

Patrons wishing to visit the Men's today may find themselves trespassing into a WAAF zone!

FRANZ-CHRISTIAN

RETURN TO MEMENTOS OF THE MIGHTY

By Larry S. Tabor, 1Lt, USAFR

Top left: **Photograph (signed), First Army patch, sergeant's stripes and ribbon bar belonging to Sergeant Kenneth Ahrens, survivor of the Malmedy Massacre on December 19, 1944. At the bottom of the photo is a map pouch complete with maps, 13th Airborne Division command and staff patch, and 4th Army patch belonging to Colonel S. Kail, 13th Airborne Battalion Commander.** *Top right:* **Garrison cap and signed photograph belonging to General James Gavin, wartime commander of the 82nd Airborne Division.** *Above left:* **Photograph, USAAF insignia and colonel's rank belonging to General Bruce K. Holloway, wartime ace in the 14th Air Force and later commander of the Strategic Air Command.** *Above right:* **Newspaper article, log book, brigadier general's star and ribbon bar belonging to General Lester M. Maitland, the first man to cross the Pacific from California to Hawaii in 1927 along with his navigator, General Hegenberger.**

Left: **Hat belonging to Private Sorenson, US Marine Corps Medal of Honor winner in World War II.** *Right:* **Photograph, Navy Distinguished Service Medal and Third Army patch belonging to Lieutenant General Lucian Truscott.**

Fourteen years ago I picked up *After the Battle* No. 3. After thoroughly reading the magazine, I turned back to page 52 and the article on 'Mementos of the Mighty'. The article centred on Gerald Ewing, a prison dog-handler who had gathered a large collection of memorabilia belonging to famous military leaders. Being then all of fifteen years old, I thought that his accomplishments were fantastic! Unfortunately I had neither the education or knowledge on how to acquire such items myself, so I could only admire Mr Ewing's achievements.

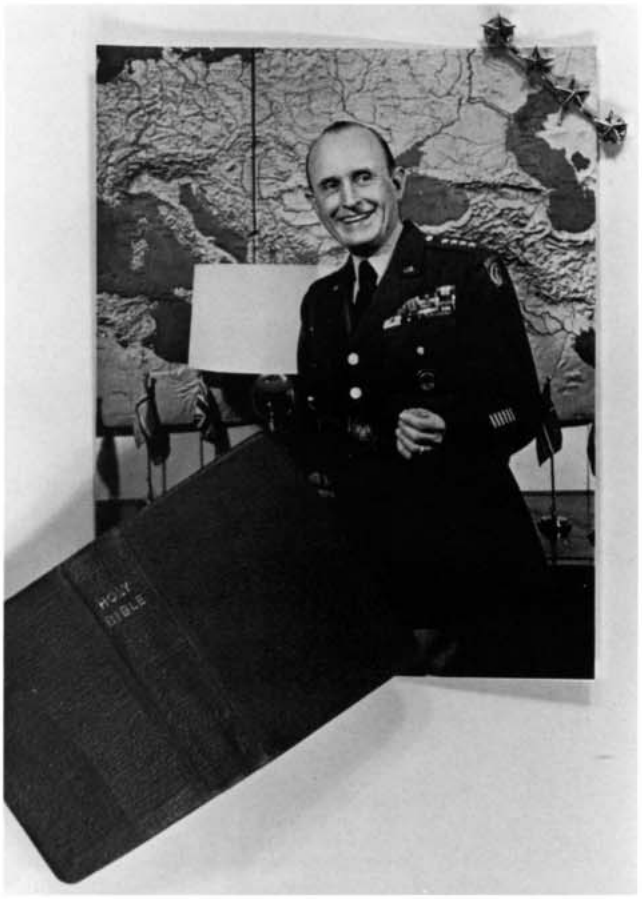
As time passed, I went to college and received a Bachelor's degree in history followed by a Master's degree in military history. I was also commissioned as an officer in the Air Force. The education gave me the knowledge to pursue my desires in history and the job allowed travel. Furthermore, I was assigned the task of building two museums for the Air Force. This brought me into contact with many of the history makers of World War II. After my tour of duty in the Air Force, I returned to my home town where I began teaching history at college level. Recently, I have accepted the post as director of a museum.

It is the dream of many to own something belonging to a famous leader or military hero. Having obtained such an item, what to do with it? I believe in using such items as tools for knowledge, and public display. Having an item secluded away in a vault does no one any good.

This brings me back to Gerald Ewing. Around 1980 I started using the knowledge I was gaining to set up a military VIP display. I did not want to copy his idea exactly; instead I expanded the display to include not only military leaders, but celebrities and valourous individuals. I concentrated on America's military heritage for the simple reason that I felt that many Americans growing up today were unaware of the contributions made by our country's military. Many seem to be flocking to movie characters like Rambo and Freddy Krueger for inspiration. Realising that these were two extremely poor examples of the plethora of unsuitable heroes plaguing the country, I

Signed photograph and shoulder board from Captain David McCampbell, Medal of Honor winner and the Navy's highest scoring ace with 34 victories in World War II. Belt buckle and Veteran's Medal belonging to Field Marshal Wilhelm von List. Star and ribbon bar of General Morris, Commanding General, 10th Armored Division.

Photograph, Marksman badge and Combat Infantryman's badge belonging to Major General Charles Beauchamp, G-3 of 1st Armored Division.



Picture and general's stars from General Gruenther. Bible belonging to jazz singer, Dave Brubeck, carried with him in the Battle of the Bulge.

have doubled my efforts in the last two years to preserve that valuable heritage.

As Gerald had done, I researched the individuals and selected them, based upon their accomplishments. Commanding generals of divisions, corps, and armies were selected for leadership. Film and television personages were selected for their wartime accomplishments and their post-war achievements. Many of these 'Movie Stars' studied acting under the GI Bill of Rights. Finally, those individuals that won awards for heroism, such as the Medal of Honor, or accomplished unusual feats, such as the first man to cross the Rhine, were chosen.

Using the library, research notes, books, anything which would give me a clue as to the whereabouts of the chosen individuals, I began a tremendous letter-writing campaign, starting about 1982. I had found out during the course of the research that many of the notables had passed away, many in the 'sixties and 'seventies. I then set about finding the next-of-kin if possible. Almost immediately I met with success. I already had some items belonging to General George S. Patton, obtained from a friend of the family who served with the general. Other individuals started responding. I have been able to obtain items belonging to General Henry 'Hap' Arnold, chief of the USAAF. Other notables include Presidents Roosevelt and Truman, General Matthew B. Ridgway, commanding general of the XVIII Airborne Corps, Charlton Heston, Bob Hope, Lieutenant General James Gavin, commander of the 82nd Airborne, Lieutenant General Alan Jones, commanding general of the 106th Division, Sergeant John Squires, Medal of Honor winner, Captain David McCampbell, Medal of Honor winner, Mel Brooks, Admiral Husband Kimmel, C-in-C Pacific Fleet at the time of Pearl Harbor, Brigadier General James Gallagher, commanding 395th Infantry Regiment, General Maxwell Taylor, commander of the 101st Airborne Division, and President George Bush, navy pilot.

The artifacts range from insignia, helmets, patches, wings, medals, uniforms, to a Holy Bible. If asked which is the most important, I couldn't honestly answer. I have, however, chosen the following items that represent the

***Enola Gay* material. Escape map of Italian/North Africa campaign area, signed by General (then Colonel) Paul Tibbets, also a photograph signed by General Tibbets. Lower left-hand corner is a photograph signed by the navigator, Captain Theodore van Kirk, along with a set of his wings and a patch. The upper right-hand corner is a photograph signed by the tail gunner, Staff Sergeant George Caron.**

Left: **Rosette, ribbon, and reverse of Medal of Honor belonging to Sergeant John C. Squires, 30th Infantry, killed in Italy.** *Right:* **Lieutenant general's stars, major general's stars, brigadier general's star, US insignia, colonel's rank, captain's rank, American Campaign Ribbon, World War I Victory Medal, Air Medal, Croix de Guerre, Croix de Guerre ribbon, and World War I pilot's wings with military aviator star, all belonging to General of the Army/Air Force Henry 'Hap' Arnold.**

criteria I set forth earlier. Certainly the most moving is some letters written by fighter pilot Second Lieutenant George A. Whiteman, shortly before his death at Pearl Harbor on December 7, 1941. He was one of the first airmen killed at Wheeler Field after jumping into a P-40 which was shot down on take-off. He represents an unprepared nation, but containing a core of loyal dedicated young men willing to give their all. The most important as far as leadership is the set of wings worn by General of the Army Air Force 'Hap' Arnold. The most historically significant is a letter written by President Truman concerning the death of President Roosevelt, in which he states 'may God give me the strength to carry on'.

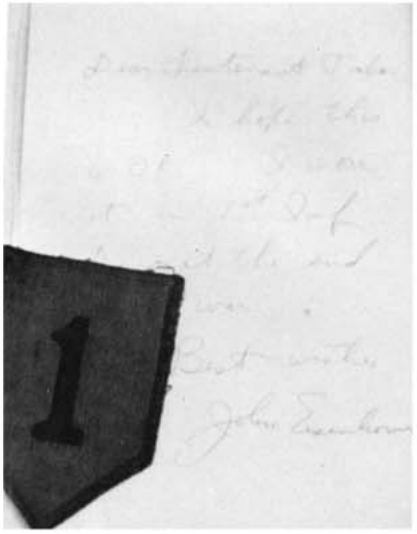
The Hollywood scene is best represented by Charlton Heston who sent some autographed military pictures. Mr Heston's post-war career is one of success and respect. During World War II he served as a radio operator in B-29 aircraft. The artifact that most exemplifies the spirit and courage of the American soldier is the Congressional Medal of Honor belonging to Sergeant John C. Squires for action in the Anzio beachhead with the 3rd Division in Italy. Although not hurt in the action for which he won the medal, Sergeant Squires was killed during the fight towards Rome, four days after his 19th birthday. His all but forgotten resting place is in Zachary Taylor Cemetery located in Kentucky.

At present the display boasts three presidents, two generals of the Army, two Navy fleet admirals, two Army commanders, one Air Force commander, two corps commanders, eight division commanders, three bomb group commanders, nine Medal of Honor winners, nine aces, plus various battalion commanders, aviation pioneers, movie stars, writers, actors, singers, and other notables, representing some 300 individuals. Everything shown is mounted, labelled, and displayed in quality cases.

It is discouraging to read about the passing of many of these important history makers, especially if I have just received something from a particular person. My resolve hardens in an attempt to preserve as much as possible. I have also run into the problem of individuals who have nothing left to give. In these cases I at least try to get an autographed photograph of the person taken during the war. I have had responses from 75 people who had absolutely nothing left. I also have replies which were negative and 100 non-responses. In my search I encountered many individuals who tried to sell me items, but I refuse in all cases. If I do not receive an article directly from the individual, or a source I can authenticate, I won't accept it. It is hard to put a price on history. Unfortunately, some only see things for their monetary value and not as a part of the historical and cultural value of America.

As earlier stated, I have recently accepted the post of director of a museum. I have found that many national museums have 'treasures' that the public hasn't seen for years. In this day and age they need to get

Left: **Shoulder board from Admiral J. J. Clark of USS *Yorktown*.** *Right:* **Cap and photographs from Navy pilot, George Bush.**



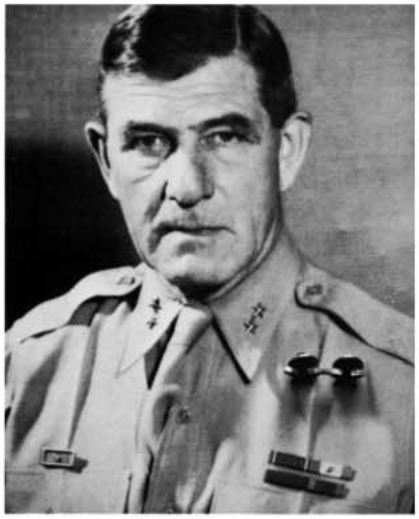
Every item in the collection is authenticated either officially like this citation *left* with the photo and Navy Distinguished Service Medal of General Simon B. Buckner Jr, killed on Okinawa *(see After the Battle No. 43)* or with personal letters. *Centre:* **Patch and jump wings belonging to General Maxwell Taylor, commanding general of the 101st Airborne, and** *right* **patch from First Lieutenant John Eisenhower who served with the 1st Infantry Division.**

these items on display. Young people and adults have a much better understanding and appreciation of the men and women who took part in World War II, or any of America's wars, if they can actually see an item belonging to the individual, along with a photograph of the person. If one can obtain personal anecdotes to go along with a biographical history, an informative lecture can be created to further increase the knowledge of interested onlookers.

I hope to continue to add to the display. This means more research. I am beginning to concentrate on naval notables, an area in which I am lacking. However, until I am able to receive some help from naval officials, I suspect I will continue to have trouble gathering naval artifacts. Recently, I have branched out and added several German notables including a field marshal and a divisional commander. I have been able to add several British heroes, including the redoubtable Sir Winston Churchill. I have also gone further into the history of America to include soldiers from Vietnam, Korea, World War I, the Spanish-American War, Indian Wars, Civil War, and the various other small conflicts that have involved American fighting men around the globe for the past two and a half centuries.

Cap worn by actor William Windom in the 508th Parachute Infantry Regiment.

World War II was the largest conflict on earth. We must continue to pray that such a war never occurs again. The soldier must bear the brunt of war. In order to ensure that the memory of the sacrifices made is kept alive and that we will not repeat the mistakes of the past, we must properly honour those who defended us. I shall continue my quest to preserve this history, with thanks to Mr Ewing wherever you are.



Photograph and rank stars sent by Major General William Hoge, the commander of 9th Armored Division.

Patch from Major General William Milley *left*, of the 17th Airborne Division and *right*, a piece of parachute belonging to Robert Murphy, D-Day pathfinder of the 82nd Airborne Division.

THE REMAKING OF MEMPHIS BELLE

By Roger Freeman

The motion picture industry often undertakes 'remakes' of a film story, but rarely is a documentary recast as fiction. Warner's new epic about Second World War airmen, *Memphis Belle*, is based on the factual film of the same name that followed the crew members of a Fortress bomber on their last combat mission. Hollywood's renowned William Wyler made this documentary and the idea for the fictional movie originated with his daughter Catherine, who is its co-producer with David Puttnam.

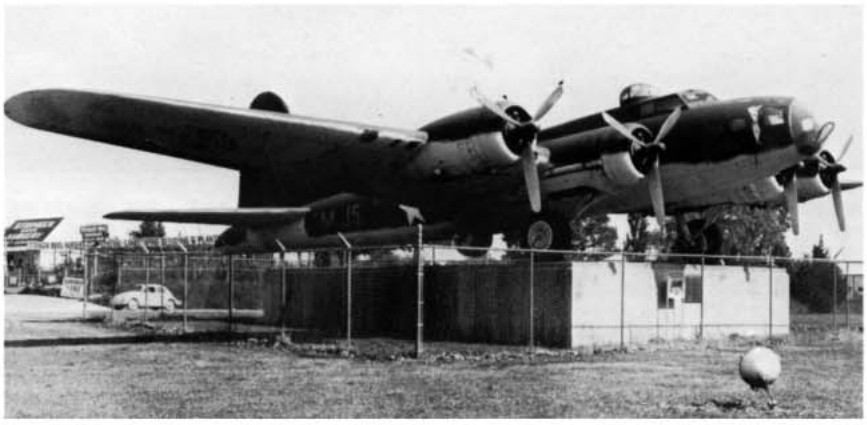
William Wyler made a number of Hollywood successes and was at work on *Mrs Miniver*, the fictional story of a British war wife, when the United States became involved in hostilities in December 1941. Thereafter, he was recruited by the US Army Pictorial Service, which was set up — among other things — to make instructional and publicity films. Through friends from the movie industry who were serving at USAAF HQ in Washington, he met some of the commanding generals and interested them in his ideas for filming with operational units to provide material for training purposes. The USAAF was then in the process of building a very large force of bombers with the aim of conducting a strategic offensive against Nazi Germany. The capital expenditure on aircraft, equipment and training was prodigious and frowned upon in some military and government quarters. The US Navy in particular, saw this as an obstacle to its own funding and was also sceptical of the USAAF's programme and objectives. To counter adverse comment at a crucial time, USAAF HQ favoured a documentary film of its bomber operations and in the autumn of 1942 Wyler, then a major, was sent to the United Kingdom with this assignment.

Top: **Major William Wyler with the crew of *Bad Penny*, one of the aircraft belonging to the 91st Bomb Group of the Eighth Air Force during the filming of *Memphis Belle* in 1943.** *Above:* **In 1989 his daughter Catherine followed her late father's footsteps to England to remake the film which is considered one of the Second World War's finest documentaries.**

In the spring of 1943 several crews were nearing the 25 missions which was to be recognised as the yardstick for the fulfilment of a tour of duty. At Bassingbourn, the most convenient station to London where Wyler had chosen to base his movie, there were at least two aircraft in the running, *Delta Rebel 2* and the *Memphis Belle*, a B-17F serial 41-24485 of the 324th Bomb Squadron (coded DF☆A). In the event, *Hell's Angels* of the 303rd Group at Molesworth was recognised by the Eighth Air Force at the time to have completed her tour first but, for the purposes of the film and subsequent publicity tour to be run in the United States, the honour was bestowed upon the *Memphis Belle* on the successful completion of her 25th sortie — to Lorient — on Monday, May 17. (Post-war research now reveals that the 25th mission took place on May 19 to Keil.) *Right:* **Three weeks later Captain Robert Morgan and his crew were given an official send-off by General Jacob Devers, Commander USAAF European Theater of Operations, and General Ira Eaker (right), Commanding General of the Eighth Air Force.**

At Eighth Air Force and its Bomber Command in England, Wyler found two acquaintances from Hollywood days, Sy Bartlett and Beirne Lay, both screenplay writers and now officers involved in public relations. With their help Wyler began to develop ideas and undertook gunnery training so that he would be permitted to fly on daylight bomber missions. Colour stock was to be used at a date when colour was very much more the exception than the rule, although its use dictated good filming conditions in view of the limitations of camera lenses at that time. The chief location airfield selected was Bassingbourn, near Royston, primarily because it was the most accessible from London. The resident unit was the 91st Bomb Group and Wyler and his cameramen flew with them on several occasions to obtain combat footage. The dangers involved were soon obvious and in the course of these flights a cameraman was lost in a shot down B-17. At the time only one in three of the 91st's combat personnel had a chance of surviving his assigned tour of 25 missions.

Eventually a story-line was developed around an individual Fortress crew. Unfortunately, when filming was in an advanced state this particular crew was missing in action. Attention then turned to Captain Robert K. Morgan's crew and the *Memphis Belle*, their 'regular ship' which was named after Morgan's girlfriend. It appeared that the *Memphis Belle* and the Morgan crew were likely candidates for becoming the first in VIII Bomber Command to complete 25



The *Memphis Belle* remained Stateside for the remainder of the war on training duties in Florida, and was purchased by the city of Memphis for $350 in March 1946. However no proper provision had been made to house what was now undoubtedly America's most famous B-17 and the Fortress was destined to moulder away in the open air at the local National Guard Armory for nearly 30 years *(above)*.

By the 1970s the 'Belle' was in a sorry state, both externally and inside where virtually every moveable item had been plundered by souvenir hunters. It was only after the Memphis Belle Memorial Association was formed in April 1976 that any positive action was begun to save the aircraft. Restoration began in 1979, but it was not until 1987 that the 'Belle' was ready for her last move to a purpose-built display dome at Mud Island. *Right:* **The real belle, after whom the aircraft had originally been named, was Captain Bob's wartime girlfriend, Miss Margaret Polk.**

THE CREW: Left to right, standing, Technical Sergeants Hanson and Loch, Captains Evans, Leighton, Verinis and Morgan, kneeling, Staff Sergeants Scott, Winchell, Quinlan and Nastal.

In the specially-prepared booklet produced in July 1943 to tell the story of the *Memphis Belle* to aircrew then under training in the States, Captain Morgan (rear right) emphasised the importance of teamwork. 'We had 10 men working together, each ready and able to help out anybody else who might need him.' His team in this particular picture were, L–R rear: Technical Sergeants Robert Hanson, radio operator, and Harold Loch, engineer and top turret gunner; Captains Vincent Evans, bombardier; Charles Leighton, navigator, and James Verinis, co-pilot. Front: Staff Sergeants Cecil Scott, ball turret gunner; Clarence Winchell, waist gunner; John Quinlan, tail gunner; and Casimer Nastal, waist gunner.

missions. Individuals who reached this number and completed their tour were to be returned to the USA or given non-combat duties in England. It transpired that *Memphis Belle* was not the first Fortress in the Eighth Air Force to survive 25 missions but by that time Wyler had persuaded Eighth Air Force's commanding officer, Major General Ira Eaker, of the publicity value if *Memphis Belle* and Morgan's men, having reached the magic 25, be the first bomber and crew with that distinction to be returned to the United States together.

Wyler then centred his story-line around the *Memphis Belle* and crew on this last mission. He wrote the basic script himself on return to the United States, where some six months were spent on assembling and editing, although the film suffered further delay and was not released until April 1944.

The resulting 38-minute feature was acclaimed as outstanding. Despite having to work with much poor quality colour footage, the production skilfully conveyed the facts of the daylight bombing campaign within the medium of high drama. While, inevitably, an element of propaganda was involved, the flag-waving stance, so common in most wartime documentaries, was avoided in *Memphis Belle*. The film was undoubtedly one of the best, if not *the* best, of factual wartime films about US air operations.

After the war Wyler returned to Hollywood to make many more successful movies such as *The Best Years of Our Lives*. However, the experience with the early Eighth Air Force bomber crews remained for him one of the most memorable periods and one of which he never tired of reminiscing with friends and colleagues who were also 'over there'.

Daughter Catherine eventually went into television administration and production, first with Warner Brothers and then for the US Public Broadcasting Service. In 1986 David Puttnam, the new head of Columbia Pictures, recruited Catherine as his senior vice-president of production, responsible for developing non-fiction properties for feature films. In her new rôle, one of the suggestions put to David Puttnam was a film about the Eighth Air Force bomber crews, citing the *Memphis Belle* documentary. Puttnam asked for a screening and, greatly impressed, asked Catherine to explore the possibilities of a full length movie with a similar theme.

The first task was to ascertain the availability of B-17 Fortress aircraft. Catherine Wyler knew there were a few maintained in flying condition by enthusiasts because her uncle, restaurateur David Tallichet, owned one. Through Tallichet she found that at least eight B-17s were currently airworthy in the United States. Further, she discovered that the original *Memphis Belle*, which had been acquired and preserved by the city of Memphis, Tennessee, at the end of the war, had recently been refurbished and relocated in a permanent exhibition hall on Mud Island, Memphis. Dedication was planned for the spring of 1987 and Catherine attended this function where she talked to B-17 owners and veterans, all of which convinced her that the project was viable.

Catherine Wyler's team for the remake: L–R rear: Matthew Modine, pilot, who plays Dennis; Daniel Sweeney, navigator (Phil); Tate Donovan, co-pilot (Luke); Billy Zane, bombardier (Val) and Harry Connick Jr, the tail gunner (Clay). Front: Eric Stoltz, radio operator (Danny); Reed Diamond, engineer (Virge); Sean Astin, ball turret gunner (Rascal), and waist gunners Neil Giuntoli (Jack) and Courtney Gains (Eugene).

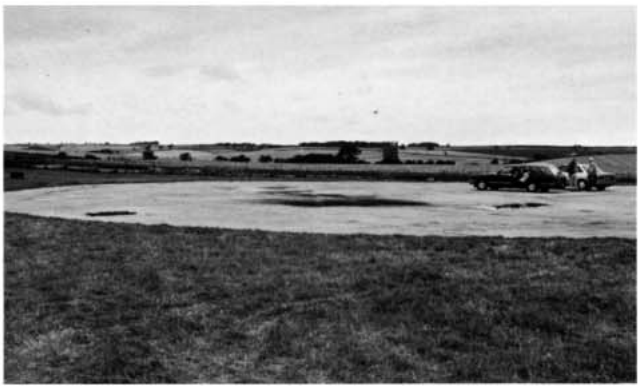
With twice as many B-17s airworthy in the United States than in Europe, it was obviously more sensible to make the film in America. However, because no airfield location could be found to simulate an East Anglian aerodrome of the period, and because some B-17 owners in the States were less than enthusiastic at the terms offered, it was decided to switch production to Britain. Even so, Production Designer, Stuart Craig, looked at several airfields before selecting Binbrook in Lincolnshire, recently vacated by the RAF. Certain fixtures and fittings of the post-war period like the control tower *left* had to be hidden or, like the lighting towers *right*, dismantled. Then a new wartime-style control tower was built on the edge of the apron. Stuart decided that even at a cost of £32,000 it would be more practical to build it of brick rather than the wood and plaster of normal film sets. Alan Tomkins, the Art Director, recounts a humorous moment during its construction when he had to tell the local builder that for a wartime building he was making too good a job of the bricklaying. Alan reckons the story will be recounted by the brickie in many a pub of how, for the first time in his life, he was paid good money to do a bad job!

Puttnam's stint with Columbia, part of Coca Cola's empire, was short-lived and during 1987 he returned to Britain to regenerate his own company, Enigma Films. The *Memphis Belle* idea was not forsaken and Puttnam proposed that Enigma take on this project and that Catherine Wyler join him as co-producer.

The next step was a script, and for this the producers chose Monte Merrick, a young US playwright whose screenplay for *Staying Together* had been widely acclaimed. The resulting script was to be subjected to a number of re-writes through Catherine Wyler's determination to make it both historically and technically accurate. It is to Monte Merrick's credit that he endured the fault-finding of various authorities on the subject and made numerous changes which elevated his original draft from the questionable to the highly credible while still sustaining its dramatic qualities.

The question of where the film was to be made, the USA or UK, was primarily dictated by the availability of vintage aircraft. With at least eight airworthy B-17s in the States, the first proposal was to film the aerial and airfield sequences there and the studio scenes in England. Puttnam asked his associates, Eric Rattray and Stuart Craig, to go to the States to secure the services of the various B-17 operators and to search for

One of the tasks of the Art Director and his staff is to construct the finished sets while the Set Dresser, in this case Ian Gill, has to provide the authentic 'dressing'. When one entered flying control in the newly-constructed tower (note dodgy brickwork through the door!), one was transported back in time. Everything was authentic — right down to the polished lino.



Out on the airfield proper, bomb dumps appeared *(left)* and a frying pan hardstanding *(right)* was laid down near the perimeter fence so that early scenes of the *Memphis Belle*'s crew talking over the fence to farm workers could be shot. Note the church (two-sided) which provided a link with the real Little Stukeley church of the Wyler picture.

suitable airfield locations. Stuart Craig started in New England and moved down as far as Louisiana looking at airfields that could suitably represent a piece of England, but nothing was really satisfactory. When it came to interesting the B-17 owners in the project, several were not willing to accept the fees offered. Meanwhile investigation of the three B-17s flying in Europe brought more favourable responses and it was then decided to carry out all filming in the UK if some of the US operators would be prepared to fly their aircraft across the Atlantic. Initially three accepted and although one later withdrew, a firm commitment from David Tallichet and Bob Richardson to bring their Fortresses to England finally decided the location question. David Tallichet, himself a wartime B-17 co-pilot with the 100th Bomb Group at Thorpe Abbotts, Norfolk, is said to have been finally persuaded by his niece offering to give his B-17 the starring rôle as *Memphis Belle*. The rotund Bob Richardson, sadly now deceased, had the oldest B-17 still flying. Both men were no strangers to movie and TV work with their aircraft, Richardson's having featured in *Tora, Tora, Tora*, a movie about the Japanese attack on Pearl Harbor. For the location work he had to fly from the west coast of America to Hawaii, so was no stranger to long over-water flights.

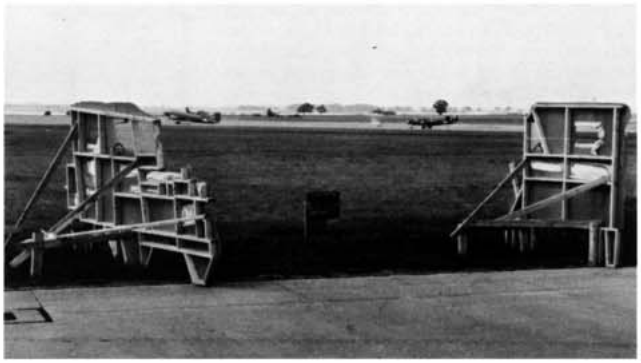
The major hurdle negotiated, David Puttnam now brought together the rest of his production staff, all highly experienced and several with international credits, this gathering being known in the British film industry as the 'A Team'. The amiable Eric Rattray shouldered the task of Associate Producer, which was the title bestowed on the individual entrusted with the day-to-day production problems and responsible for juggling the finances. A colleague described him as the front line general. In an industry where vanity and affectation are hallmarks, the *Memphis Belle* production personnel were all surprisingly pleasant and approachable people. This was particularly so in the case of Stuart Craig who, as Production Designer, had the job of finding locations and deciding on sets; in other words his responsibility was arranging the film backgrounds in which the actors would operate. Oscar awards for *Gandhi* and *Dangerous Liaisons* are proof of his expertise in this respect.

Stuart Craig's first task on returning from the US was to seek out a suitable airfield for location work. He had already had a look at Bassingbourn, the wartime home of the real *Memphis Belle*, but this was now an army barracks and security alone would have ruled out its use, besides which most of the runways had been removed. Enquiries to find a remote, deserted, but intact Second World War airfield took him next to Predannack in Cornwall, only to find that the surrounding countryside could in no way be reconciled with East Anglia. While in the area, someone suggested he take a look at St

While the five B-17s — two from the States, two from France and one from the UK — were being prepared, Brian Bishop, the Scenic Artist, was preparing a few of his own! Brian's fortè is to use reflected light on shiny surfaces to enhance the 3D effect of what is in reality a flat painting and, when viewed at a distance from the correct angle, who could tell the difference?

Eval. Here he encountered an RAF guard who, on learning Stuart's quest, remarked that Binbrook in Lincolnshire, where he had previously been stationed, was now on a care and maintenance basis and might be just what was wanted. A quick visit to Binbrook convinced Stuart Craig that this was near to ideal for Enigma's purposes. The surrounding countryside was devoid of modern developments and not unlike the rolling land in the south-west of East Anglia. The C-type hangars were like those at Bassingbourn and on the technical site several wartime Nissen huts remained in good condition. A modern control tower, lighting masts and a few other post-war structures were the only alien features and could be satisfactorily dealt with.

The Ministry of Defence agreed to Enigma's tenure and work was quickly put in hand during the spring of 1989 to carry out the necessary changes to Binbrook's landscape. The modern control tower was still RAF-manned for occasional touch-and-go visits by Tornados and could not be dismantled. Instead, it was hidden from camera angles by fake wartime-style buildings. A standard control tower of the period was then built in front of the hangar line. Much to the incredulity of the local builder's foreman overseeing this task, it was substantially built in brick like the real WWII towers, although it was to be demolished as soon as filming was completed. However, the interior ground floor of the building, which would not appear in shots, was not completed. The first storey watch room was to be used in the film and the interior was eventually fitted out with authentic equipment. Permission was obtained to take down the large lighting masts and the odd small modern buildings around the airfield were masked by placing period vehicles or mock-up aircraft in front of them. On the north side of the airfield a cluster of loop hardstandings was selected for parking the B-17s during ground scenes, and an additional concrete standing was added to the far end in the form of a circular pan.



The 60-odd authentic vehicles assembled at Binbrook were also augmented by more displays of Brian's handiwork.

Our author, Roger Freeman, examines the interior of one of the genuine Nissen huts at Binbrook converted by the Art Department into a mess, dining hall and briefing room. A lifetime's study and research, with many publications to his credit including his *Mighty Eighth* trilogy, has put Roger in a class of his own as far as the Eighth Air Force is concerned, and he was appointed Technical Adviser at an early stage. The design for the end wall was based on the officers' mess of the 381st Bomb Group at Ridgewell, although the dates and some of the targets were altered in keeping with the film's time span of spring 1943. Mission target listings were a common feature of interior decor at most bomber bases.

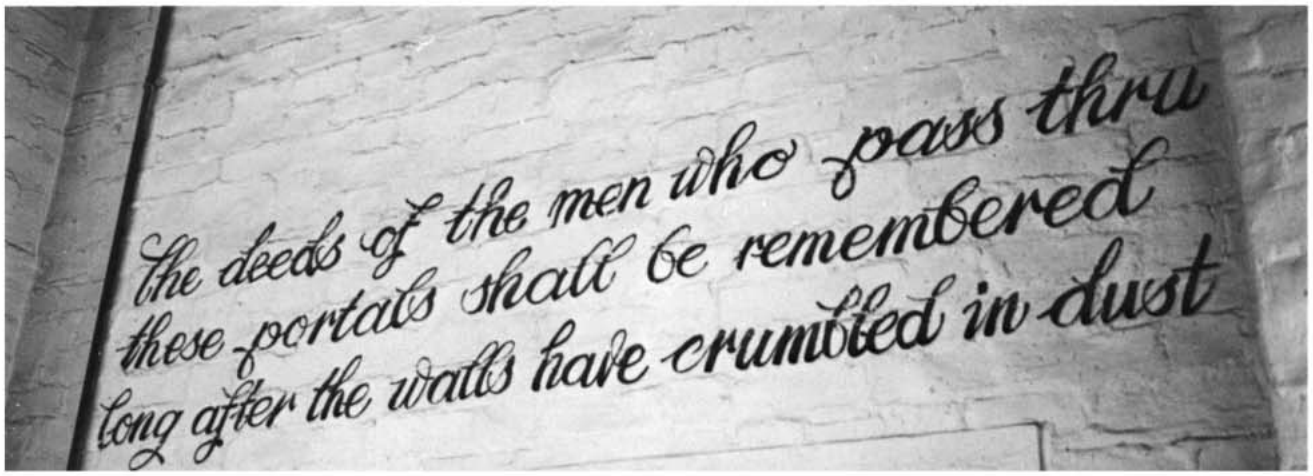
Binbrook was originally built as a grass-surfaced airfield and was under construction at the outbreak of war in 1939. When completed it was first occupied by the remnants of the Battle squadrons, Nos. 12 and 142, which had been part of the RAF contingent in France before Dunkirk. Limited operations began in the summer of 1940 and both squadrons later converted to Wellingtons. In the autumn of 1942 the airfield became non-operational while concrete runways were laid. When this work was completed in the following spring, No. 460 Squadron, an RAAF-manned unit, moved in and remained until the cessation of hostilities. No. 460 was for much of the time a three-flight squadron with a nominal complement of 36 Lancasters. This enabled it to fly more Lancaster sorties than any other squadron in Bomber Command and it is also believed to have delivered the largest tonnage of bombs — some 24,000. Attrition matched the effort and over 100 aircraft were missing on operations from Binbrook. After the war Lincoln and Canberra equipped squadrons used the station and the last RAF occupants were Nos. 5 and 11 Squadrons equipped with Lightnings for air defence.

While Binbrook would be the main location site, arrangements were made with the Imperial War Museum to operate all aircraft from their airfield at Duxford in Cambridgeshire during the filming of the main flying sequences. Not only was Duxford more accessible from Enigma's Shepperton and Pinewood bases, it also had the required engineering and refuelling facilities that were essential in keeping 45-year old aircraft flying.

In addition to the B-17s the script called for enemy and Allied fighter types. The Luftwaffe could only be represented by the Spanish-built version of the Messerschmitt Bf 109, the Hispano Buchon, three of which were available. The Allied escort fighters posed more difficulty. The *Memphis Belle* story-line was linked to the spring of 1943 when escort fighters were US P-47 Thunderbolts or RAF Spitfires. As only a single P-47 was flying in the UK, this type was ruled out. Spitfires were available in numbers but were not acceptable to the production committee because 'the viewing public associates Spitfires with the Battle of Britain'. A total of nine airworthy P-51 Mustangs were operating in Europe and the decision was made to have this type, even though its use was alien to the timeframe in which the story is set. P-51 escort fighters did not come into operational service in the United Kingdom until the end of 1943, and the actual models available, late P-51Ds, until early in 1945. (Their use intermingled with 109s in the early attack scene may also be somewhat confusing.)

This illustrates an occasion when dramatic

The scene where the crew are interviewed for *Life* magazine.



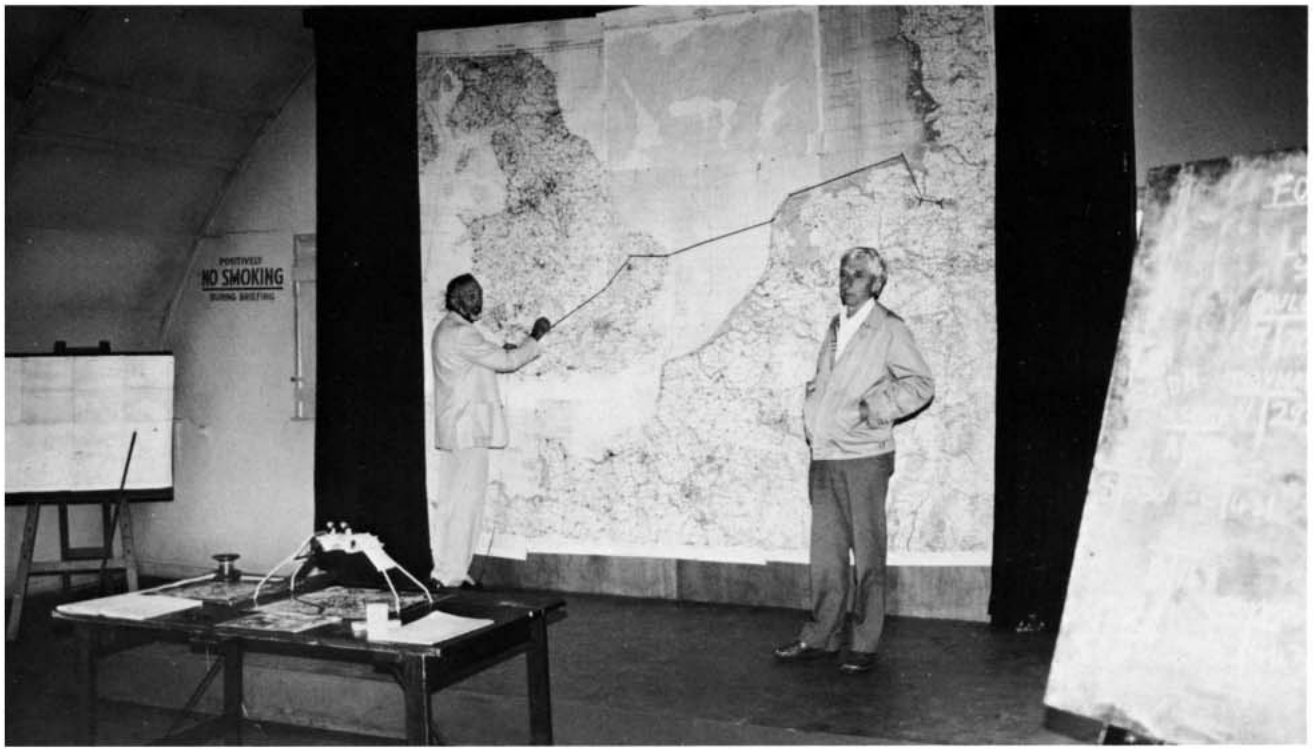
Above: **Nice touch over the doorway of the briefing room — it was based on an original inscription at 390th Bomb Group at Framlingham. The artist for all the artwork — like the canteen lady (right) and the nose art on the aircraft — was the Graphics Designer, Robert Walker. Originally it had been intended to use stick-on illustrations for the B-17s which could be quickly changed, but the difficulty of attaching a flat print securely to the curved nose so that the slipstream would not tear it off led to the painting of all artwork direct. So expert did he become that, if pushed, Robert could do a woman in less than an hour!**

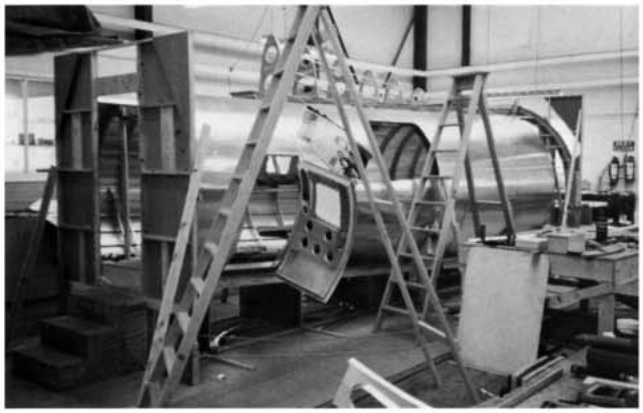
appeal had precedence over authenticity. To the purist such actions are unforgivable, particularly when elsewhere so much care has been lavished on the production to ensure historical accuracy. In this case the decision was not motivated by the oft-given film industry view 'the vast majority of movie goers will never know, let alone care', but rather by the salient rule never to spoil dramatic effect by confusing the audience. There were to be other occasions when authenticity was surrendered to the cause of drama, albeit few.

Puttnam and Wyler had, as somebody put it, 'wall-to-wall covering in experts and advisers' but, in the final analysis, the producer's and director's decision was paramount.

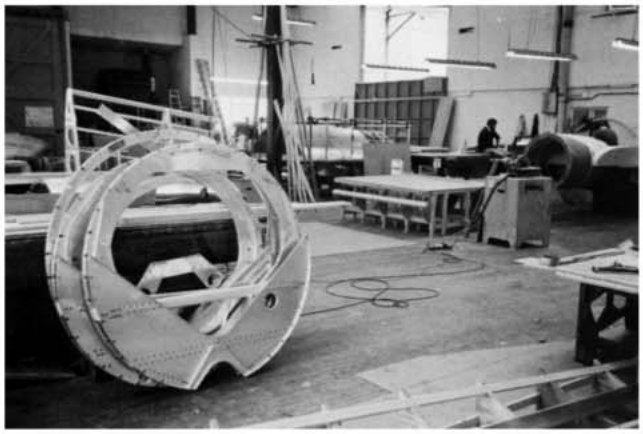
With some two-thirds of the screenplay set in the bomber itself, Stuart Craig's next quest was a B-17 fuselage that could be used for studio work at Pinewood. Despite extensive enquiries, world-wide, no such separate fuselage could be located. There was no option but to construct a complete mock-up interior using the studio craftsmen headed by Bill Welch. It was the Art Department's job to transfer the complicated Boeing drawings sent over on microfilm from the Boeing archives into readable drawings for the film technicians. These microfilms were combined with detailed measurements taken from Duxford's *Mary Alice* which has been virtually put back to its 1943 layout. *Mary Alice*'s interior proved a great help in the early days in viewing a complete interior

Alan Tomkins, left, with Roger in the briefing room. The map is made up of coloured photo-prints of authentic maps of the period. One showing the actual Flak areas in 1943 was copied from an original in the museum at Bassingbourn.





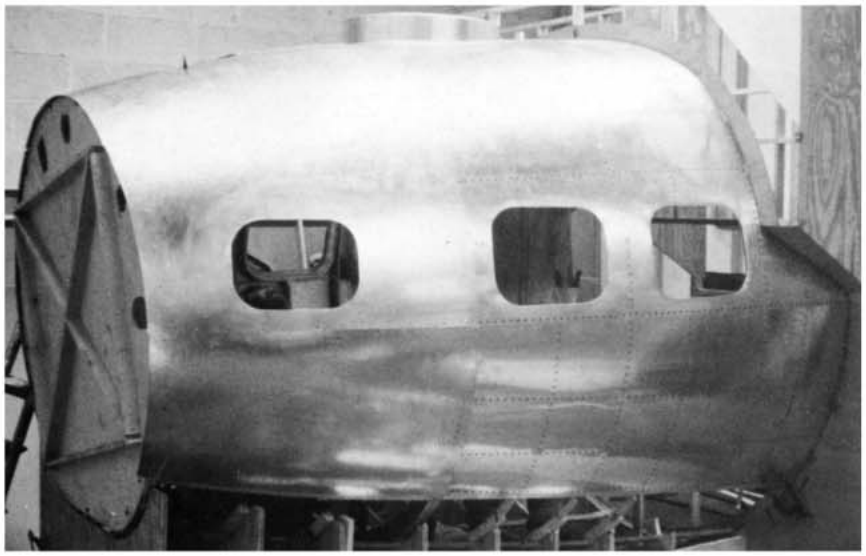
The Construction Department, under its manager Bill Welch, was the largest department on *Memphis Belle* with over 40 carpenters, 12 plasterers, 12 painters, 10 riggers and 10 stagehands. The department's crowning glory was the building of a full-size replica of a B-17 fuselage to be used for close-ups of the crew inside the aircraft. Not only was its accuracy correct, right down to the last rivet, it was also made to come apart in six different places to facilitate various camera angles, etc. Here the sections take shape at Pinewood where the interiors were filmed.

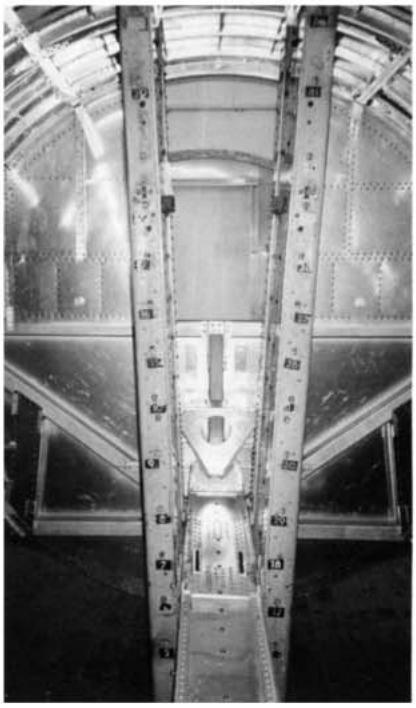


whilst Bruce Orris was combing the States for the equipment to dress the mock-up. Everything from control columns to bomb racks, radios to rear guns, were on his shopping list. The mock-up fuselage was made so that it would break down into six sections, so that close-up filming in the nose, flight deck and aft area was possible.

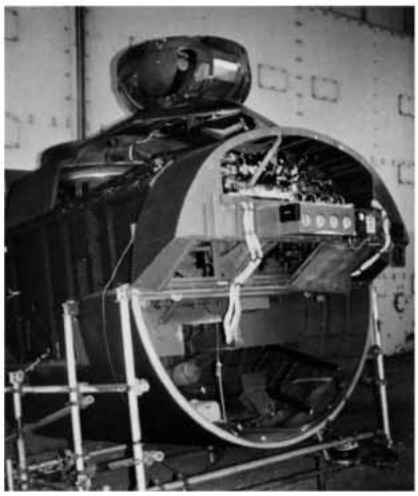
There were also a great many pieces of authentic equipment of WW2 vintage that had to be acquired for the airfield sets and building interior sets, ranging from flare pistols to wall posters. Probably the most difficult to locate was the appropriate parachute harness and later types had to be used to meet all requirements.

Meanwhile, what had started out as *Memphis Belle* had become *Southern Belle* then reverted to *Memphis Belle*. As with the original documentary, the movie story-line follows the 25th and final mission of the ten-man crew of a B-17 who are scheduled to be the first crew to return to the US with their aircraft for a publicity tour. Elsewhere in the plot most is fancy, with fictitious crew members and engineered drama. As there was only a tenuous link with real people and



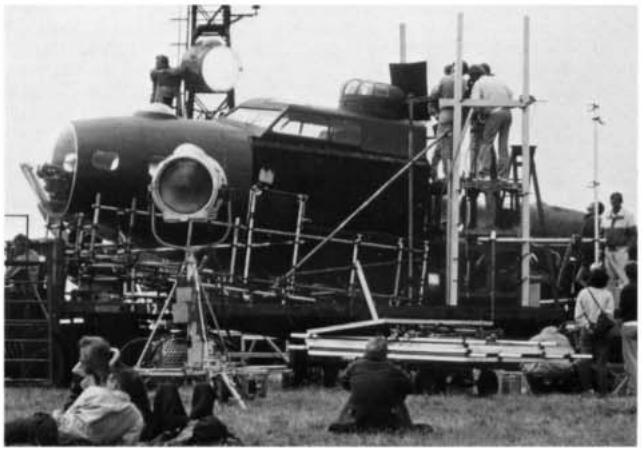


Above: **The nose section was farmed out to the Mo Gomme company at Weybridge which specialises in the construction of racing car body shells, and whose craftsmen are expert in fabricating in metal.** *Right:* **Where possible, original B-17 equipment was installed. This section of bomb rack was obtained in the States by Bruce Orris. The final cost of the mock-up was £420,000 — more or less the same price in 1990 money as a fully-fitted wartime B-17!**

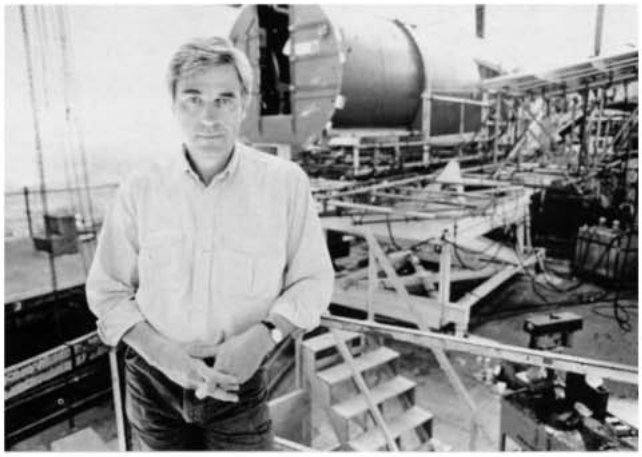


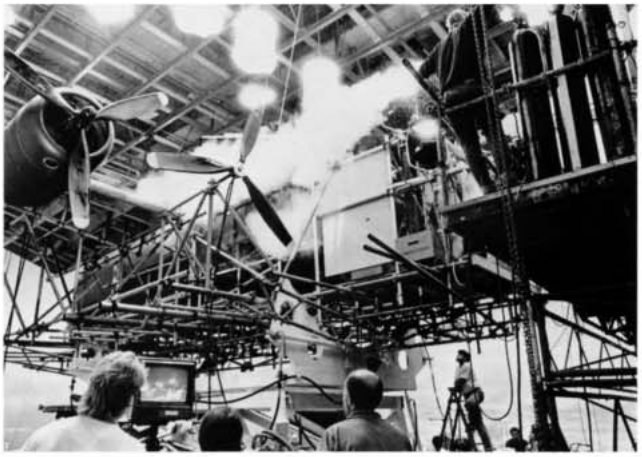
From conception to completion the mock-up took 12 weeks to build. At the time of writing (June 1990) it is on public display in the Warner Bros studio in Brisbane, Australia.

events, the decision was made to separate further. The main reason was to lessen the chance of an unknown veteran claiming he had been portrayed in a defamatory way in the movie. The title was changed to *Southern Belle* and the unit represented in the film was no longer the 91st Bomb Group. However, when Warners had signed up to back the production, their legal department took a closer look at *Southern Belle*. Informed that there were at least three B-17s with this nickname known to have flown with the Eighth Air Force during wartime, and possibly 100 veterans around the USA with connections to these aircraft, there was a prompt return to *Memphis Belle*. At least all surviving crew members of the real *Memphis Belle* had read the script and given their approval. Also, as far as could be ascertained, there were no other genuine wartime B-17s that had this nickname.



The individual sections were rigged in a variety of positions according to how much or what part was needed. *Above:* **This set-up was for filming the *Memphis Belle* moving at speed down the runway behind another B-17 taking off.**

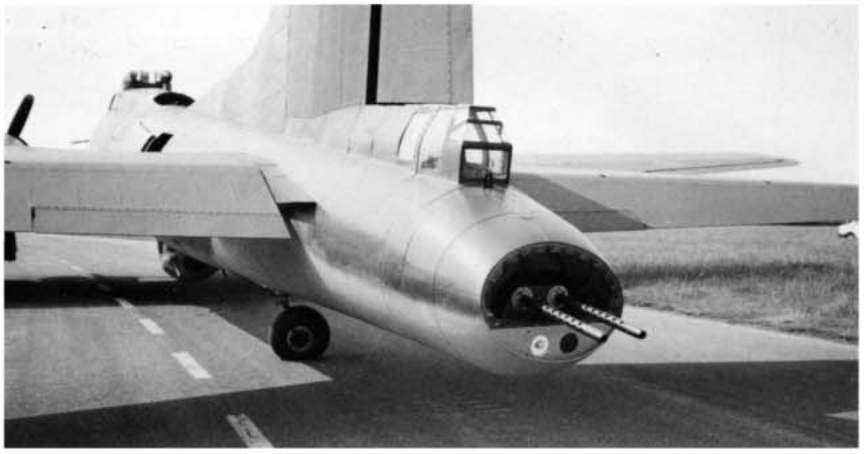




After the shooting at Binbrook had been completed, the mock-up was taken back to Pinewood. *Left:* **Production Designer, Stuart Craig, with the fuselage now mounted on a huge rocking gimbal. On the left a painted sky backdrop, another of Brian Bishop's masterpieces.** *Right:* **The Special Effects department, under Richard Conway, uses carbon dioxide to simulate clouds. The video monitor of the camera's viewfinder helps his engineer control the effects. Note how parts which will not appear in shot, like the No. 3 engine and the underside of the starboard wing, have not been provided.**

Making a major feature film is well known to be a very expensive business and this one is said to have been budgeted at $23 million. Any deviation or delays from the planned schedule increases expense by leaps and bounds. For that reason film production is carried out with the precision of a military operation and once committed it has to be today and not tomorrow. To achieve this a 12-hour working day is not unusual.

By mid-March the decision to carry out all the aerial photography in the UK brought a flurry of activity to get the B-17s into Duxford to meet the starting date of June 26. The sole British-based Fortress, familiarly known as *Sally B*, because of availabilty and access, would feature large in the film makers' plans. This aircraft, owned by B-17 Preservation Limited, was a B-17G model, as were Tallichet's and both the French-owned aircraft to be used in the production. All the European Fortresses were survivors of the fleet once operated by the Institut Géographique National at Creil for high altitude photographic work. For the movie it was necessary to refigure all the 'G' models as B-17Fs, the 'G' not having entered service in the timeframe of the movie. This required the replacing of the stubby Cheyenne tail gun positions with the so-called 'Stinger' model, removing chin turrets and, where necessary, installing ball and upper turrets. The tail turret modifications were achieved by installing a structure of the required type over the existing positions. Several ball and upper turrets had to be specially constructed. Waist windows had to be opened up in rear fuselages and dummy guns and fittings installed, as well as in the radio room hatch and nose windows. Much of this engineering work was carried out on the aircraft at their home bases while they were undergoing overhauls to fit them for a hectic period which was scheduled to involve some 20 hours flying. The appropriate paint schemes of olive drab uppers and neutral grey lower coats were to be applied at Southend. The individual markings decor would be the work of Enigma's Art Department. When fully configured and painted these Fortresses were almost indistinguishable from true B-17Fs of spring 1943. Only the modern radio antenna remained as its removal would have breached CAA regulations.



The 'Stinger' tail gun mounting, characteristic of the 'F' model B-17 of the mid-war period, was one of several modifications necessary to transform the four B-17Gs. In this case, the newly-fabricated tail structure — another Mo Gomme special — was neatly fitted over the existing one. The two lights beneath the gun, white to port and red to starboard, were intended to be used to signal to other aircraft when to release bombs.

The two B-17s making the North Atlantic crossing flew across independently and, to avoid any problems with the CAA, Enigma had previously sent B-17 Preservation's Chief Engineer, Peter Brown, to check that all requirements could be met. David Tallichet's B-17's home base was Chino, California, and it eventually reached Duxford three days before the scheduled start of filming, piloted by the owner and with a three-man crew. Bob Richardson's home base was Seattle and he had to install additional fuel tanks in the bomb bay of his B-17F to provide safe endurance for the long North Atlantic crossing. Bad weather at Gander delayed departure from North America and he had not arrived when filming began on schedule on Monday, June 26. The two French B-17s arrived from Southend that day, resplendent in their new paint schemes. In fact the paintwork was too new for Enigma's Art Department who set about providing a stained and weathered look on all aircraft except the French *Château de Vernieuil* which was to represent a new machine in the film.

While the five B-17s were each to represent an individually named B-17 in the storyline, they also had to serve to represent a bomb group of some 30 aircraft. To this end the Art Department applied one set of identity markings to one side and a different set to the opposite side. In the course of filming markings were frequently changed to further this cause. Only *Memphis Belle* (the Tallichet aircraft) appeared with genuine B-17 markings; likenesses of the real *Memphis Belle* nose insignia, fuselage letters DF☆A and tail number 124485. Other tail numbers were just a few removed from genuine B-17F

The B-17s arrive — July 1989 at Binbrook . . . or is it the summer of 1943 at Bassingbourn? Because the signals square outside the 'new' control tower was displaying the wartime 'BS' identification letters of the latter aerodrome, air traffic control received several messages from RAF aircraft overflying the airfield complaining that Binbrook was showing an incorrect code! Note also how the grass had to be extended in front of the tower to give it more breathing space. The turf was laid on sand spread over the concrete apron and had to be continually watered to keep it green.

AIRCRAFT APPEARING IN MEMPHIS BELLE

B-17F-70-BO — Constructor's No. 4896, AAF 42-29782, civil registration N17W.
Film rôle: *C Cup*, 124299 DF☆X
Crew: Bob Richardson, Donald Clark, Donald Wallace and Henry Strauch.
Oldest B-17 in film having been delivered to USAAF in Feb 1943. Used chiefly for training during WWII. Acquired by Stuttgart, Arkansas, in 1946 for memorial purposes. Sold for commercial use in 1953, a large cargo door being installed the following year. Employed in a fire-fighting rôle and later appeared in the films *1,000 Plane Raid* (1968) and *Tora, Tora, Tora* (1969). Owned by Bob Richardson and based at Seattle.

B-17G-85-VE — Constructor's No. 8246, AAF 44-8846, civil registration F-AZDX, *Lucky Lady*.
Film rôle: *Mother and Country*, 25703, DF☆S
Crew: J. Gattegno, G. François, J. Galy, A. Domine, P. Blanquart and P. Godefroy.
Only B-17 still flying that is definitely known to have seen combat in WW2. As DS:M of 511th Bomb Sqdn., 351st Bomb Group, it served as squadron lead on seven missions from Polebrook, Northants in April 1945. After USAF service in Europe it was acquired by IGN at Creil and operated on high altitude mapping photography. Now owned by Jean Sallis of La Ferte Alais.

B-17G-85-DL — Constructor's No. 32187, AAF 44-83546, civil registration N3703G.
Film rôle: *Memphis Belle*, 124485, DF☆A.
Crew: David Tallichet, Joe Krzeminski, Chris Bennett and Shawn Miller.
Operated by USAF in immediate post-war years then used as a flying tanker for commercial work. Now owned by David Tallichet and based at Chino, California.

B-17G-100-VE — Constructor's No. 8552, AAF 44-85643, civil registration F-BEEFA, *Château de Vernieuil*.
Film rôle: *Baby Ruth*, 124292, DF☆U.
Crew: As with F-AZDX. The French contingent operated as a team.
One of the first B-17s obtained by IGN (in 1947) and the last in the Institute's service. Destroyed at Binbrook on July 25, 1989. Owned by IGN.

B-17G-105-VE — Constructor's No. 8693, AAF 44-85784, civil registration G-BEDF, *Sally B*.
Film rôle: Initially *Windy City*, 22960, DF☆M.
Crew: Keith Sissons, Alan Walker, Mac McKenny, John Littleton, Peter Brown, David Littleton and Steve Carter.
Another of the IGN Fortresses and acquired by the late Ted White in 1975. Based at Duxford. Owned by Ellinor Sallingboe and B-17 Preservation.

P-51D-20-NA — AAF 44-63221, civil registration N51JJ.
Film rôle: AJ☆S *Candyman*
Owner: Stephan Gray's Fighter Collection.

P-51D-20-NA — AAF 44-72216, civil registration G-BIXL.
Film rôle: AJ☆L *Miss L*
Owner: Robert Lamplough.

P-51D-25-NA — AAF 44-72773, civil registration G-SUSY.
Film rôle: AJ☆C.
Owner: Charles Church.

P-51D-25-NA — AAF 44-72917, civil registration G-HAEC.
Film rôle: AJ☆A *Ding Hao*
Owner: Old Flying Machine Company.

P-51D-25-NA — AAF 44-73877, civil registration N167F.
Film rôle: AJ☆N *Cisco*
Owner: Andres Saether.

All the above painted to represent aircraft of 356th Fighter Sqdn., 354th Fighter Group, one of the first operational units with Merlin Mustangs. True serial numbers were retained. In addition, two other P-51Ds (Spencer Flack's NL1051S and Doug Arnold's NL314BG) were available for distance shots but retained their usual livery.

Hispano HA.1112 — MIL Buchon civil registration G-BOML.
Film rôle: Gruppe leader's markings.
Owner: Old Flying Machine Company.

Hispano HA.1112 — MIL Buchon civil registration G-HUNN.
Film rôle: Black 14.
Owner: Charles Church

Hispano HA.1112 — MIL Buchon civil registration D-EFHD.
Film rôle: Black 15.
Owner: Walter Eichorn.

tail numbers of the spring 1943 period, although after a few weeks expediency took over and several deviations from this programme were observed. In addition to the true squadron letters combination DF, the other three squadrons of the bomb group were represented by markings DP, MJ and ZQ, which were hangovers from the *Southern Belle* planning. The Art Department had no difficulty in devising appropriate nicknames and nose art for the different identities. At some time or other *Sally B* portrayed a dozen different B-17s.

Bob Richardson finally arrived at Duxford on Thursday, June 29 with 'only three fans turning'. While on the final leg from Prestwick and only ten minutes from Duxford, No. 4 engine suffered a broken connecting rod and had to be quickly shut down. While discussions on obtaining a replacement engine ensued and the finishing touches were put to the other B-17s, filming concentrated chiefly on the three 'Me 109s' and the Mustangs that were to hand.

Principal camera aircraft for the air-to-air shots was the 'Aces High' B-25 Mitchell that had seen service in many aviation-related feature films. David Watkin (another Oscar recipient) and his camera team began by taking fixed frame shots where the camera does not move and the aircraft must manoeuvre into the picture. This was to provide the backgrounds for superimposing studio action. Enigma had brought over retired Air Vice-Marshal Ronald Dick from the US

Bob Richardson's B-17F *(above)* was already a film veteran in her own right before he flew her to Britain to star as *C-Cup*. Sadly Bob *(below)*, a 'big' man in every respect, never lived to see the film completed — he died peacefully on April 2, 1990.

Although Roger as Technical Adviser pointed out that, at the time the film story is set, the escort fighters would have been British Spitfires, he was overruled because it was believed that the general public only associated the type with the Battle of Britain. Hence P-51 Mustangs were introduced, albeit some nine months before they actually saw service in Europe! This is *Cisco* owned by Andres Saether.

As far as Luftwaffe fighters were concerned, there was really no choice as the only aircraft which could conceivably be used were the German-designed, Spanish-built, British-engined Hispano Buchons which first caught the public eye in *Battle of Britain* in 1969. Then the film company had managed to field nearly 30 airworthy machines — 20 years later the number had shrunk to 3!

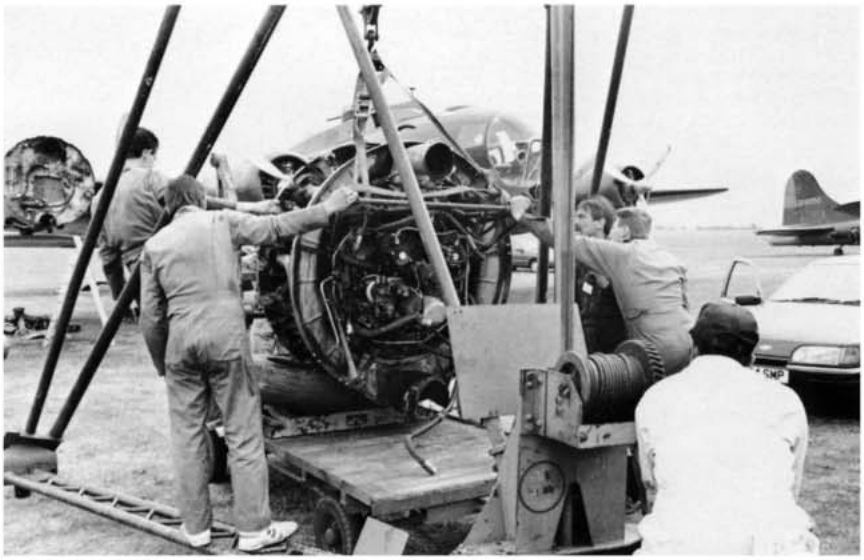
(where he now lives and was once the British Air Attaché) as a back-up pilot. A few years ago Ron Dick flew the B-17 now in the RAF Museum from the US to the UK and is still a qualified B-17 pilot. In the event his services as pilot were not required but he was invaluable in an unforeseen capacity. On his first flight with the camera crew he found the assistant director using the agreed clock system, but for vertical not horizontal directions! To say the least, radio communications between pilots and the air director became confused until Ron Dick acted as an intermediary, translating what the director desired into pilot's language. Attacks by the 'Me 109s' were among the requirements and Ron Dick admits to wincing when some of these were delivered head-on.

To avoid regular military and civil flight paths, the Memphis Belle aircraft were usually directed to the east Norfolk and Suffolk area by RAF air traffic controllers at Honington. More than one rural resident who had not heard of the movie project was astonished to find a World War II air battle above his head. A Norfolk farmer phoned the author to exclaim: 'Am I off my bloody rocker? I've just seen three Fortresses with a couple of Me 109s shooting at them!'

At times it also became a little too exciting for the fliers. While filming formations over Diss on Friday, June 30, Ron Dick saw the cowling come away from the No. 1 engine of the French B-17 *Lady Luck*. 'Just as if it had been blasted off. Flew back and scraped the tailplane. Unfortunately, not one of the cameras caught it. There were a few choice gallic curses over the radio.' The cowling was retrieved near Stowmarket by the police and returned to Duxford by the time the B-17s were back on the ground again when it was found that a whole cylinder had come away.

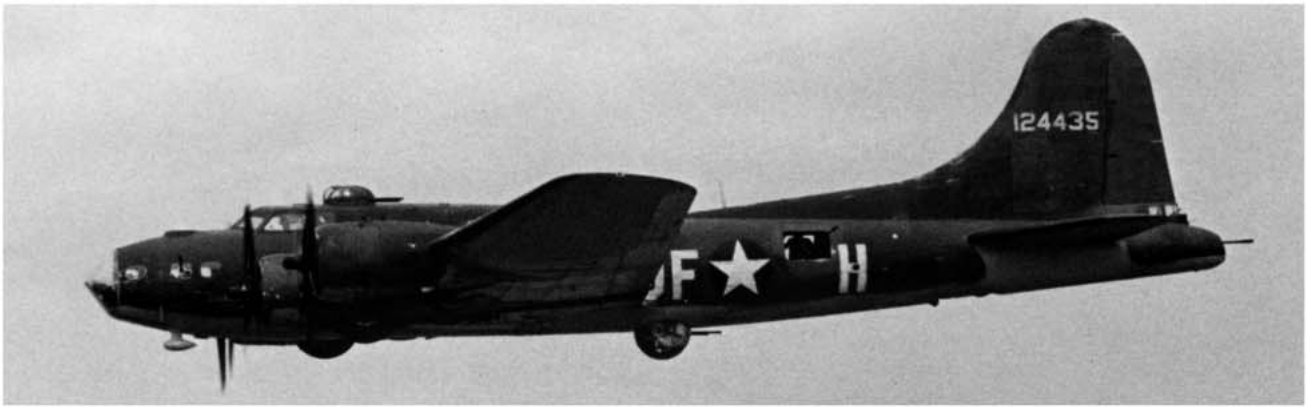
Lucky Lady is a nickname by which B-17 registration F-AZDX has been known since becoming part of the Jean Sallis veteran aircraft collection. It was the only one of the five B-17s employed in *Memphis Belle* to have actually seen combat operations during World War II, having flown seven missions from Polebrook, Northamptonshire with the 511th Bomb Squadron in April 1945.

When the media arrived for the first scheduled Press Day on Sunday, July 2, they found two engine changes under way. With the agreement of the IWM, Duxford's static B-17G, *Mary Alice*, became the donor of a replacement engine for Richardson's B-17F while *Lucky Lady* received a reconditioned Wright on hand as a spare in the French camp. Unfortunately, this particular engine had previously been used as the moulding die for fibreglass replicas required as props to be seen in the location filming at Binbrook. Some of the components had been removed and the moulding material had found its way into the oil system. On *Lucky Lady's* first flight with this engine low oil pressure indicated trouble. A number of engine sump flushings eventually resolved the problem but not until filming was almost completed. Understandably, this did not please *Lucky Lady's* crew who were often to be seen working on this engine.



Initially the aircraft were based at Duxford — by coincidence the same airfield used by Spitfire Productions for *Battle of Britain*. In 1969 it was still retained by the RAF on care and maintenance, but by 1989 it had become the thriving home of the Imperial War Museum's collection. Thus when *C-Cup (above)* required a replacement engine, one was readily available from the IWM's *Mary Alice* on static display.

***Mother and Country* (*Lucky Lady*), the only one of the five B-17s to have undertaken combat operations, was also in need of a new engine when a cylinder blew off while filming over Suffolk.**



Constant changes in serials and codes were necessary to multiply up the number of aircraft seen in the film. Roger supplied a list of suitable serial numbers and codings, but, under pressure, corners were cut. Here *Memphis Belle*, 124485, DF☆A (the Tallichet aircraft), has been quickly re-coded with an 'H' and the '8' has just been turned into a '3'. The eagle-eyed enthusiast will also spot one brief moment where an aircraft is seen bearing different names on either side!

All five B-17s were able to participate in the day's schedule on July 6, although the Tallichet aircraft had to 'abort' with a non-crucial fuel problem. Wear and tear was also telling on the B-25 where an engine began making disturbing noises on the 10th, eventually grounding the aircraft. While the B-25 was out of commission the Old Flying Machine Company's Grumman Avenger was substituted. Working from the open rear emplacement of this aircraft was not a popular perch with the cameramen, even on a hot summer's day.

Sally B became the workhorse of the quintet in that it was fitted with the necessary devices to simulate an aircraft in distress, and also to carry the largest number of real .50 calibre machine guns to fire blank ammunition. To fake the demise of a B-17, small explosive charges were attached to the outer fuselage skin of the aircraft to be fired electrically at the flying director's command. Chemical smoke machines were installed on Nos. 1 and 2 engines which, when activated, gave an effective impression of engine fire smoke. Undesirable smoke was frequently a feature of the atmosphere within the Fortresses when guns were fired. Due to the composition of the blank rounds' charge, the smoke and the pungent smell of cordite made rather unpleasant conditions for the crews. There were problems with these rounds jamming in the ammunition feeds and case links had a propensity to fly out of openings, requiring preventive modifications lest somebody far below received a nasty injury. Real .50s for firing were only installed in the waist, cheek, ball and tail turret positions of *Sally B* and in the cheek and waist positions of the Tallichet aircraft. The former had a specially made ball turret and its guns were operated remotely. The Tallichet B-17 had a genuine ball but the gun installation would not function properly.

Flights were usually of about two hours duration with action photography from 5,000-10,000 feet. The combat altitude of World War II Eighth Air Force B-17s was an optimum 25,000 feet so ground-obscuring cloud below was a useful masking for the film makers. On cloudless days the bright yellow of flowering oilseed rape fields was a pretty but undesirable backcloth; nor could much be done about the modern system of tractor tracks through growing crops, known as tramlines. A higher altitude than 10,000 feet was desirable but could not be safely attained without engine supercharging or crew oxygen.

The filming at Duxford had to be terminated by July 16, when all the veteran aircraft were scheduled to transfer to Binbrook where main location filming was to commence next day. Prior to leaving Duxford and through the good offices of Ron Dick, when three of the Fortresses set out on a sortie their flight plan was fixed so that they would pass over Bassingbourn where a party of 91st BG veterans were visiting. This spectacle, to quote one former navigator, 'left hardly a dry eye among us'. The following day, while re-dedicating their

Preparing a scene using the elevating Chapman crane. Michael Caton-Jones, the director, stands with his hands on his thighs in the centre.

The *Sally B* — which played *Windy City* and *My Zita* among others — was the only aircraft fitted out with smoke pots to simulate engine fire. Here she makes a low pass over the control tower, topped by its glasshouse. The dolly arm supports a remote camera controlled via a video monitor by the camera operator, Derek Browne.

Memorial at Royston, the veterans were treated to a view of all five B-17s in formation.

Some 65 genuine World War II US military vehicles were hired from enthusiasts. Jeeps predominated but there were examples of every type that would have been seen on a wartime USAAF airfield with the exception of the large gasoline tankers and tricycle bomb trollies. An example of the large fuel tankers does not appear to have survived in this country, but at least one tricycle bomb trolley is known but was not located in time for the film.

Art Director Alan Tomkins, and construction manager Bill Welch and his 30-strong team had been at Binbrook for about a month before shooting began. The interior of two Nissen hut sites had been transferred into a communal mess and a briefing room; a bomb dump of fibreglass bombs constructed and perimeter track markings painted out. Various offending structures on the airfield had been suitably camouflaged and a number of B-17 mock-ups constructed out of timber and canvas. At close quarters these appeared extremely crude but at a distance highly effective. Indeed, David Tallichet professed he thought Enigma had managed to find some additional real B-17s when he first noticed these mock-ups in misty visibility on

The vehicles were assembled by John Sargeant of 'Motors for Movies' and Peter Toombs at a total cost of £60,000. Larry Carne *(above)* was the only enthusiast willing to let his Jeep be overloaded with the entire *Memphis Belle* crew, and his is the one seen in the action shot *below*. Which are the real aircraft?

arrival from Duxford. The five B-17s had moved out on the afternoon of Sunday, July 16, and flew to Binbrook in formation.

Another early arrival at Binbrook was Kevin Westley, an Assistant Director. His task was to find some 800 extras that were required. Other members of the Enigma team had been making arrangements for accommodation and the logistics of the location force.

On July 16 the greater proportion of the 250 personnel that Enigma brought to Binbrook were on hand, including 24 young American actors. The single actress (British) involved was not scheduled to arrive until two weeks later. The American actors had arrived in the UK in June and following an indoctrination course on Eighth Air Force history and the parts they were to play, Catherine Wyler arranged for them to go to what she called 'boot camp'. Eight days conditioning under the command of ex-SAS Terry Forestal on Dartmoor involved a dose of military-style discipline and drill. To quote Catherine Wyler again, 'to make them understand what soldiering was like and to get them to really know one another'. From their accounts the conditioning was not particularly popular but accepted, as were the uniform short haircuts.

There are several nice instances where the remake mirrors incidents in the original Wyler film. The man with the mouth organ on the bomb train is one example. However, says Alan Tomkins, 'We made the bombs out of fibreglass and plaster — they were not meant to be sat upon!'

Although a crash sequence had been planned for the film, and Alan had already purchased a suitable aircraft wreck for the occasion, no one bargained for a real one! On July 25 *Baby Ruth* — one of the French aircraft — veered off the runway and across the grass. David Lee caught the very moment when things began to go wrong *(above left)*. **Failing to gain lift, the port wing smashed through a tree on the airfield boundary, the aircraft pancaking in a field of growing wheat beyond, breaking its back** *(above right)*. **Fortunately all aboard got clear before the fire took hold** *(below left)*, **but there was little the fire brigade could do to contain the blaze once the fuel tanks were alight** *(below right)*.

Apart from avid movie-goers, people in the UK will be unfamiliar with most of the actors. Matthew Modine plays the captain of *Memphis Belle* but the screenplay does not really promote a single character, rather a team which is in keeping with the theme of a bomber crew's camaraderie. The three-week location schedule involved shots with the actors around the aircraft and sequences at the control tower, mess hall, briefing room and a hangar dance. Apart from a downpour at the end of the second week, the company enjoyed fine, warm weather. The absence of rain was such that, in the sequence where the *Memphis Belle* crew board a Jeep outside the briefing room and the script calls for mud, it was necessary for Enigma to get the local fire brigade to play hoses on a patch of rotovated turf. To faithfully represent the hive of activity on a wartime bomber airfield, there were many extras dressed as both air and ground personnel, including a few girls in WAC uniforms.

Although the original schedule called for approximately 20 hours flying time by each of the five B-17s during filming, some had put in nearly twice this number by the time location work was completed. The summer drought of 1989 had ripened the cereal harvest some two weeks earlier than normal and the golden harvest fields finally put paid to the efforts to evoke spring 1943. Air-to-air filming while at Duxford had been hindered by the difficulty in obtaining cloud match when it had not been possible to complete a sequence on one particular day.

With predominantly clear skies, flying at Binbrook kept to schedule until, on the afternoon of July 25, an accident occurred that was to bring Enigma and the *Memphis Belle* project into the headlines next day. Starting take-off on main runway 21, the French *Château de Vernieuil*, only remaining B-17 in IGN service, piloted by Jean-Pierre Gattegno, suddenly began to pull to the right as the speed built up. The aircraft ran off the runway, still pulling to the right, until heading out near 45 degrees to its original direction. The main undercarriage was still on the ground when the B-17 reached the perimeter track but at this point it appears that the pilot finally managed to become airborne. Then only briefly, for No. 4 propeller cut through a large heap of stone chippings placed on a disused hardstand. This appears to have had the effect of slewing the whole aircraft violently to the left, causing the port wing to strike through the branches of a tree. The aircraft then hurtled over the airfield boundary, across a depression and crashed into a field of near ripe wheat.

The crash appears to have been caused by a binding brake or wheel bearing as a long skid mark left by one of the main-wheels ran diagonally across the peri-track. The gap where the port wing went through the tree can also be seen. The pile of gravel on the right bore several clear indentations where one of the pro-pellers had chopped its way past.

There were ten people on board who quickly vacated the wreck with the exception of a girl passenger who remained strapped in her seat. Mike Woodley of Aces High was first on the scene, having driven straight through the perimeter fence, and with the help of the pilot and one of the passengers, quickly re-entered the fuselage and brought the girl out before a fire, that had started in one of the engines, took hold. One of the IGN crew members suffered a fractured leg and a passenger a broken collar bone but the remainder of those on board had escaped with no more than bruises.

Although the fuselage had broken behind the wing in the impact, the B-17 was, remarkably, otherwise fairly uncrumpled. Sadly the engine fire could not be contained as the fire-fighting equipment available was overwhelmed once the flames reached the full fuel load. Apart from the engine blocks and the tail, there was very little left.

A specially-prepared 16-foot model was used for the first part of the spectacular crash sequence which appears early in the film. This was towed behind a car on a pre-planned line but a guide wire failed and the model veered directly towards the camera, hitting the cameraman and putting him in hospital.

For the actual explosion an old Pembroke had been purchased from a scrapyard at Horncastle which was suitably chopped about by the Art Department. Unfortunately, when the first take was filmed *(below)*, the fire got out of hand and the tailplane had to be rebuilt for a second attempt.

At the end of the day, with its authentic-looking B-17 tail and camouflage paint scheme, there was little to distinguish the fake crash *(left)* from the real thing *(right)*. Photographs by Alan Tomkins and Larry Carne.

Above: **David Murphy had to dress 500 extras for the hangar dance . . . not including Larry, that is, on the right!** *Right:* **Some of the local girls display their 1943 talents before shooting begins.**

The 700-odd Lincolnshire lads and lasses auditioned for the hangar dance scene came mostly from nearby Grimsby and Cleethorpes. The effort involved in providing uniforms and 1940s dress for this multitude was prodigious. Here Wardrobe Master David Murphy did an outstanding job that involved arranging the tailoring of authentic uniform and flying clothes where every detail had to be correct. The climax for his wardrobe team was the hangar dance scene where 500 extras displayed their jitterbugging talents. Every girl was clad in the appropriate shoes and summer dress of the times and crowned with a 1940s hairstyle. For these sequences Bob Richardson's B-17 was a backdrop to a band stage. Enigma employed eight boys with pumps to inflate 18,000 red, white and blue balloons which were suspended in a net over the dancers. The plan was to do this as a final act to the day's filming on Saturday, July 29. To achieve genuine spontaneous surprise the majority of dance extras did not know when this was going to occur. In the event the hundreds of bursting balloons produced a definite haze through released moisture.

In this scene, *C-Cup* became *Buckaroo*, the building being lit by the beams of two searchlights reflected from mirrors suspended from the ceiling. The singer is actress Jodie Wilson although she mimes to a pre-recorded voice.

Damage simulation by Brian Bishop (in picture). *Left:* **Who would think that this shot-through tail is actually perfectly sound? The foil reflects the sky and so makes a perfect match.** *Right:* **All this is painted-on damage except the shell-holes which have been carefully positioned over removable panels and a window.**

With one B-17 destroyed, and Bob Richardson's 'grounded' for the hangar scene, the three remaining Fortresses had to be worked even harder. *Lucky Lady* was still having engine problems and by the following weekend could only occasionally help *Sally B* and the Tallichet aircraft in representing a whole group take-off. This was achieved by each B-17 completing a circuit and landing to immediately be set upon by the art department who painted out tail number, fuselage letters and nose decor and then painted on a different set. With the new identity another take-off and the procedure repeated again and again. By this time the selection of appropriate tail numbers tended to have gone by the board and the nicknames were produced on the spot. David Tallichet's aircraft made one display with his wife's name, Carol, emblazoned in green on the aircraft's nose. One of the cameramen catching these take-offs was positioned at the end of the east-west runway, prone in the centre, so that the aircraft were passing directly over him at perhaps 10-20 feet.

While Tallichet's aircraft normally played *Memphis Belle*, *Sally B* received this decor during the final days at Binbrook in order to enact *Memphis Belle*'s return with heavy battle damage. B-17 Preservation had agreed to remove the vertical tail unit and replace it with — to quote an observer — 'a badly moth-eaten dummy'. Further heavy battle damage was added by the art department. Good use was made of reflective metallic foil which, when in place, gave the impression of a hole from even a short distance away. Of course, *Sally B* simply simulated a touch-down in this condition: views of the flying wreck making its approach to land involved a radio-controlled model. A spin-off from this employment was that B-17 Preservation engineers had an opportunity to inspect the real fin for any signs of corrosion before it was replaced.

The *Memphis Belle* comes home with a badly shot-up tail. In fact this is *Sally B* fitted with a false tail made specially by Feggans Brown of East London. Needless to say the aircraft never flew with this damaged tail in position.

The contract period for the B-17s expired on August 4. *Lucky Lady* returned to France next day and the other three on the 6th; Tallichet for the USA and *Sally B* and the true B-17F for Duxford. Bob Richardson departed for the States from Duxford on August 10 after satisfying himself that all was well for the Atlantic crossing. *Sally B* was still to come before the cameras again as Enigma sought to fill the gaps or decided on re-takes of certain sequences.

The main filming now shifted to Pinewood and the fuselage mock-up. However, Binbrook was not completely deserted by

The mass take-off — here 10 B-17s roll down the perimeter track towards the runway. How was it done? Turn over.

Now this was clever! Using models with 16-foot wingspans (constructed by the Special Effects Department) and the real B-17s, the secret is to get both in the correct perspective.

Enigma until September as a second camera unit was involved with filming radio-controlled models. Earlier, five beautifully detailed B-17F models with 16-foot wingspans were commissioned and used in a number of ground sequences. Shots of a column of B-17s taxi-ing round the perimeter track involved these models. The models did not move, and the sides of the elevated platform on which they were placed corresponded in the camera lens with the edges of the real perimeter track. The B-17s leading the column were real, placed some distance away to appear at the same scale. Similar tricks of the trade were used with grass-surfaced platforms.

Filming with the actors at Pinewood continued for two months and the movie was declared 'all in the can' on October 6. To ensure that the actors operated the studio B-17 correctly, Enigma had Tommy Garcia, a B-17 aficionado, on hand.

The models were positioned in line astern on an elevated platform, the surface of which had been prepared to blend with the real perimeter track. Richard Conway used bottled propane to create a heat haze.

The propellers of the models, driven by electric motors, are started and there are even miniature radio-controlled crewmen who can be moved about inside each aircraft. Ahead the real B-17s make the turn to the left, but they are sufficiently far away for their size to blend with the models. When viewed from this position the trick is obvious, but when seen from the correct angle through the camera lens, as on the previous page, the illusion is perfect.

As a goodwill gesture and publicity exercise Enigma flew six surviving members of the original *Memphis Belle* crew and their aircraft's crew chief, plus wives, to England in late July. On Saturday the 29th they arrived at Binbrook to see the filming and take part in the following day's press junket. The veterans undoubtedly enjoyed the celebrity treatment they received. Asked about the movie story-line former radio operator/gunner Robert Hanson said that he thought his crew mates viewed it with a mixture of amusement and incredulity. 'They (Enigma) seem to have taken all the tough times we had in 25 missions and put them into one.' Some of the veterans went for a flight in a B-17. Flying with David Tallichet, Bob Morgan was allowed to take the controls for a while. His comment: 'It was like five Christmas's all on the same day.'

For the newcomer to the world of movie-making, there are three impressive factors which were re-emphasised in the making of *Memphis Belle*. The film schedule is near sacrosanct and to keep it a 12-hour day is more the norm than the exception. Operatives who were out on the set at 8.00 a.m. were still there at 8.00 p.m. Secondly, time is so crucial to the budget that no one blinks an eye at on-the-spot additional expenditure. When the producer decided a quarter acre of concrete should be grass, the next day it was! Thirdly, film makers eat exceedingly well. The mobile catering was of an extraordinarily high standard and always seemed to be at hand. The glutton could have a field day and if there were camp followers in the movie caravan then they were surely only there for the food.

Movies may be made or lost in the cutting room but this one grips you from first to last and deserves to succeed. It can also be said that the degree to which the production team went to ensure authenticity has not been surpassed by any other film about the 1939-1945 air war.

At the end of July, Enigma Films Ltd flew seven members of the wartime crew to Britain to visit the film sets at Binbrook and to meet the Press. On the evening of Saturday, July 29, at the local Royal Air Forces Association HQ in Cleethorpes, Alan Tomkins took this unique picture as each man pointed to himself on the wartime shot. L-R standing: Robert Hanson; Casimer Nastal; Eugene Adkins and Clarence Winchell. Front: James Verinis, Robert Morgan and Charles Leighton. (Cecil Scott and Vincent Evans pictured on page 35 have died but it must also be remembered that, apart from the 10 men who returned to the States for the publicity tour, a total of over 50 different crewmen flew combat missions with the *Memphis Belle*.)

Videocassettes of William Wyler's wartime 'Memphis Belle' in its original full length version with viewing notes are available in the UK from After the Battle. See order form.

The following morning, out on the field, there was a chance for each man to meet his film counterpart. Matthew Modine: 'It was fun to meet them, although obviously I am playing a very different man in *Memphis Belle*.' The characters in the remake may be fictitious but the events depicted are typical of those experienced and endured on operations. The film is outstanding for its recreation of the discomforts, the humour, the fears and anxieties, faced daily by thousands of young men during the war — so many of whom failed to return. This film is dedicated to their memory.

OURS